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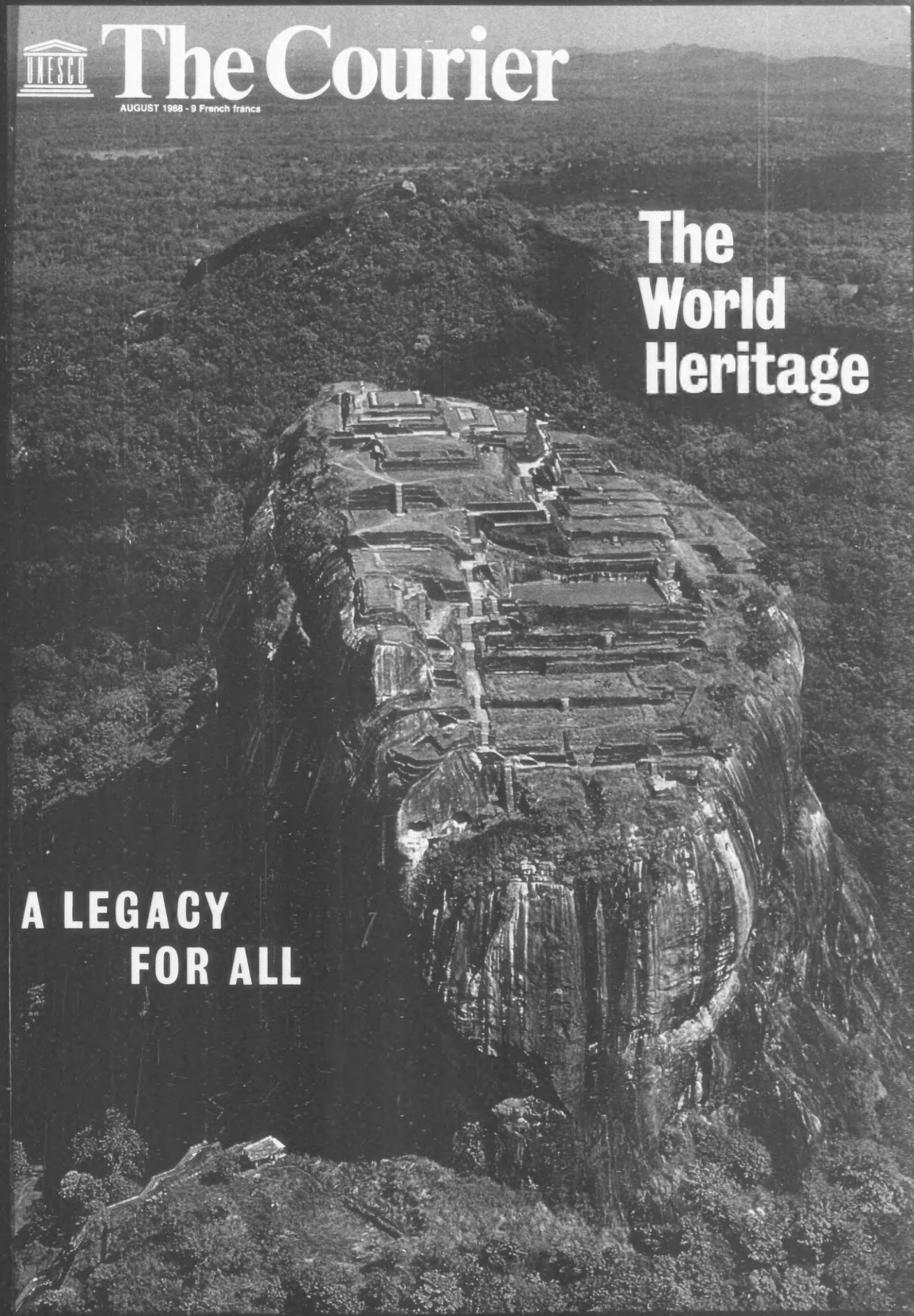

The World Heritage

A LEGACY FOR ALL

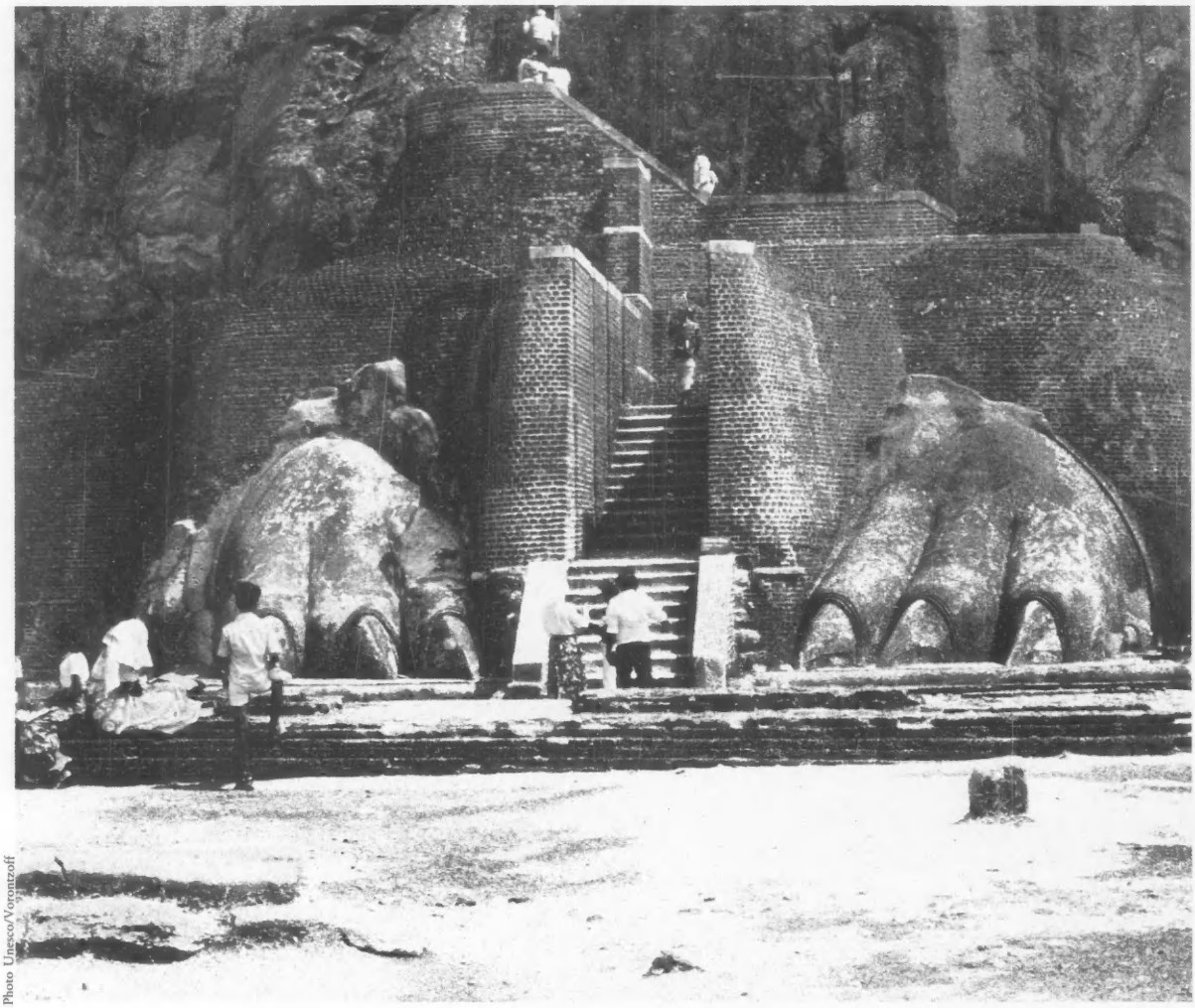

Photo Unesco/Vorontzoff

Sigiriya (Sri Lanka)

The ancient city of Sigiriya lies at the foot of an immense rock of red gneiss, 180 m high, on the summit of which King Kasyapa I built a fortified palace in the 5th century AD (aerial view, front cover). Access to the palace was via a staircase hewn in the rockface, leading up from an enormous statue of the forequarters of a crouching lion at the foot of the cliff. It was for this lion, of which only the paws remain (above), that the rock and later the city was named. On the death of the king, "Lion Mountain" was given back to the Buddhist monks who had formerly lived there, but was gradually abandoned. The ruins of the palace and its cisterns of fresh water are very impressive. The aristocratic quarter of the lower city is equally remarkable for its terraced gardens and monumental ruins from which encroaching vegetation has recently been cleared. But Sigiriya is above all famous for its rock paintings halfway up the west face of the cliff. The paintings depict 21 graceful female figures known as the "Maidens of the Clouds", comparable in their beauty to the famous frescoes at Ajantā. This site, which was inscribed on the World Heritage List in 1982, is extremely vulnerable and requires constant attention. Unesco has launched a comprehensive programme in support of archaeological excavations, conservation and site development. Painstaking conservation work is currently being carried out on frescoes damaged by a cyclone in 1978 and affected by erosion and insect attacks. To reinforce the plaster on which the frescoes are painted, synthetic resin is injected by syringe into the holes bored by the insects.

Cover: Photo R. Singh © ANA, Paris

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The Courier UNESCO
A window open on the world 41st year

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editorial

For many years Unesco has been committed to the protection of the cultural and natural heritage—the splendid monuments and sites created by past civilizations and the natural environment in which peoples have lived and formed their cultural identity. The best-known example of this commitment, the International Campaign to Save the Monuments of Nubia, was launched by Unesco in the 1960s and enabled some of the finest vestiges of the past to be saved for posterity.

The adoption of the World Heritage Convention by Unesco's General Conference in 1972 signalled the opening of a new chapter in this story. The Convention broke fresh ground by affirming the existence of a World Cultural and Natural Heritage which belongs to the whole of mankind and by inaugurating a vast project to define and inscribe on a World Heritage List sites and monuments of such outstanding value that their protection is the responsibility of everyone. In so doing, it ushered in a new form of that co-operation and solidarity between nations and peoples which it is Unesco's mission to promote.

Eight years ago, in August 1980, the *Unesco Courier* devoted an entire issue to this project. The present number brings the story up to date. It provides an overview of the different categories and groups of properties inscribed on the World Heritage List, as well as brief descriptions of a selection of them. The number of inscriptions is so high (288 properties located in 65 countries) that making a fully representative sample is no easy task. (It should be pointed out that some countries with a notable cultural and natural heritage are not Parties to the Convention and consequently do not appear in the following pages). Two criteria helped to guide our choice. Properties which featured in our August 1980 issue have not (with two exceptions) been given coverage. Secondly, we have concentrated on less well-known sites and monuments which, although quite as remarkable and beautiful as their more famous counterparts, often do not receive the attention they deserve.

Editor-in-chief: Edouard Glissant

A legacy for all

BY FEDERICO MAYOR ZARAGOZA
Director-General of Unesco

THE cultural heritage of each people is an expression of the thousand and one facets of its genius and of the mysterious continuity which unites all it has created over the centuries and all it has the potential to create in the future. The preservation of this heritage is an activity inherent in a people's vitality and creativity.

The natural environment in which a people lives also contributes to the shaping of its cultural identity. Works of human creativity are set in landscapes which are themselves sources of inspiration and beauty. The natural heritage is the complement of the cultural heritage, from which it is indissociable. It is of fundamental importance for science and for the conservation of plant and animal species, which constitute an irreplaceable resource and are indispensable for the maintenance of life on our planet.

The heritage, whether it be architectural monuments and ensembles, landscapes or nature reserves, is continually exposed to many risks of deterioration, resulting from such causes as the wear and tear of time, irresponsible human action, erosion, humidity, pollution, rampant urbanism, and mass tourism.

In face of such dangers, which are everywhere tending to become more severe, a new awareness of the need to safeguard the heritage and a new desire to co-operate actively to conserve and present it to the public are beginning to make themselves felt at world level.

Legislative, financial, technical and administrative efforts deployed in this field by different States have been given a large measure of encouragement and support from Unesco.

One of the most important of Unesco's initiatives has been the framing of the Convention Concerning the Protection of the World Cultural and Natural Heritage, which rests on the fundamentally new idea that such protection is not the separate responsibility of each individual State in which there is a property worthy of preservation, but a joint responsibility incumbent on the whole of humanity, which is the trustee of all the great landmarks in the natural and cultural history of the globe.

The Convention, adopted by the General Conference of Unesco in 1972, established a Committee of twenty-one Member States which has the task of examining, according to carefully defined criteria, cultural and natural properties of outstanding value which may justify their inclusion on the "World Heritage List".

States Parties to the Convention nominate to the Committee properties within their borders which they consider to possess such outstanding value. In so doing they undertake to protect the properties in question. But, if their nominations are accepted by the Committee, they may also be eligible for certain forms of assistance from the international community under the World Heritage Fund established by the Convention.

The Fund, which is financed by contributions from States Parties and donations from other States, from institutions and private individuals, makes it possible to provide material or technical support to those countries that need it. It also makes possible the training of specialized staff.

The success of the Convention in the last fifteen years can be gauged from the fact that 102 States have become Parties to it, and that 288 properties have been inscribed on the World Heritage List. It is to be hoped that one day the List will be fully universal and will constitute the accepted reference for masterpieces of nature and culture whose protection concerns, henceforth, all countries and all mankind.

For the Committee is not simply enumerating cultural and natural properties. It is attempting to create a world list which will be as coherent and complete as possible, following a thematic and regional approach and reflecting the interdependence of cultures and the complementarity of ecosystems in space and time.

Inclusion on the World Heritage List brings new prestige to the properties inscribed there. For the people of a country in which a World Heritage property is located such recognition is an opportunity to take stock of the finest elements of their heritage. But even more important is the opportunity thus offered to people of other countries to discover and cherish these properties, some of which are already well known, others less so.

The compilation of the List makes it possible to measure the extreme wealth and diversity of this heritage. Faithful to its mission, Unesco is thus contributing to the discovery by each of the heritage of all. ■

Photo J. de Vergara © Incafo, Madrid

BY ALISON JOLLY

Mount Taishan (People's Republic of China)

Inscribed on the World Heritage List in 1987 for its exceptional association of cultural and natural elements, Mt. Taishan is the oldest and the most important example of an ancient geological transformation system in eastern China, rich in fossils dating back to Cambrian times. Up to 462 species of medicinal plants are known to come from the area, and some of the trees are hundreds of years old. Twenty-two temples, 97 sites of ancient ruins, 819 stone tablets and 1,018 cliffside and stone inscriptions are among the many traces of China's rich cultural heritage which have been found in the area. Here, in one of the birthplaces of Chinese civilization, evidence of human activity dates back 400,000 years. During Neolithic times (5,000-6,000 years ago), the Dawenkou and Longshan cultures flourished, on the north and south sides of the mountain respectively. These mountainsides were also the sites of 2 rival States, Qi and Lu, and their cultural artefacts created between 770 and 476 BC. Ruins of a 500-km wall built by the State of Qi can still be seen in the area. Some of the temples on Mt. Taishan, such as the Temple of the Heavenly Rock, the Temple of the Queen Mother of the West, and the Temple of the Azure Clouds, are important Buddhist and Taoist centres.

The world's wild places

AN old man climbed the steep mountain. Oak forests spread their canopy below him; pines and cyprus clung with gnarled roots to the fissures of stone beside his path. His disciples followed, their thigh muscles quivering with strain. They reached the painted temple at the summit and slept, huddled in their robes. The old man rose again before dawn. He stood on a rock overhanging the abyss. Far beneath, the plain stretched unbroken for 200 kilometres towards the eastern sea. The sun rose and suddenly flared, refracted by layers of still air into a two-part goblet of red jade. "The world is small!" exclaimed the old man, and his disciples wrote it down.

It was two and a half thousand years ago that Confucius watched the sunrise from Taishan Mountain. Last year, in December 1987, at the proposal of the Chinese Government, Mount Taishan was declared a World Heritage site. In addition to its significance for the hundreds of thousands of Chinese who climb to its summit each year, it is also a global treasure.

Approximately one-third of the sites included on the World Heritage List are there because of their natural beauty and scientific importance. They include mountains such as Sagarmatha, Mother of the Universe, which Westerners call Mount Everest, gorges such as the Grand Canyon, and seacoasts such as Australia's Great Barrier Reef. Some are remote and difficult of access, such as Tassili n'Ajjer in the Algerian Sahara. The significance of some sites is not widely appreciated. A knowledge of evolutionary theory is needed, for example, to understand the importance of the rainbow array of fish flapping in a fisherman's net on the shores of Lake Malawi.

Many World Heritage sites possess a natural grandeur that has drawn people to them for worship through the ages. Ayers Rock in Australia is sacred to the Aborigines, as Machu Picchu in Peru was to the Incas. Not only Confucius but most of China's emperors and even the modern leaders of China have climbed Mount Taishan. Temples, bridges and a 6,660-step staircase have been built there, and inscribed stone stelae erected.

The World Heritage natural sites described below fall into three groups. The first group comprises habitats of **the great herds of large mammals** which are among

Photo Michael Cobus © Parks Canada

Nature's most spectacular phenomena. The second group features **wetlands**, and the third **Biosphere Reserves**, areas where a whole new concept of management is being practised with the aim of harmonizing the needs of people and nature.

■ Homes of the large mammals

Serengeti National Park is in the United Republic of Tanzania, which has set aside a larger proportion of its land for various forms of conservation than any other country. The Park was declared a World Heritage site in 1981. Not far away, in the strata of the Olduvai Gorge, lie the skulls and handbones of our earliest ancestors, *Homo habilis* and *Homo erectus*. Not all the mammals they knew have survived, but if we ever hope to imagine what it was like to be only one fragile mammal among many, it must be on the African plains.

The Serengeti National Park covers 14,763 km^2, an area with the greatest concentration of plains animals left anywhere in the world. During the rainy season wildebeeste and zebra feed on the short-grass plains of the southern Serengeti. They browse among purple and yellow wild flowers in November, then, as the grass dries, male wildebeeste begin to circle their females, gathering harems together. At the height of the rut in May the plains shimmer with heat and yellow dust, as the bulls frantically charge round and round their collection of jostling, bleating mates.

Then, on some signal still unknown to us, the whole mass of animals turns northward. They gallop for days towards the better watered bush country in the north. The grey torrent of wildebeeste pours over the banks of streams and swims across rivers. The six-month-old calves run to keep up with the other animals; many die on the way. Whatever the strange urgency that drives them, only death can keep them from their goal.

Today discoveries are still being made about the behaviour of the great mammals that roam the world's wild places such as the Serengeti. Perhaps the most startling is that of elephant infrasound. Elephants, like other mammals, have a complex social structure. Matriarchal groups of females roam apart from the bachelor bulls, although the two sexes sometimes join each other as if by telepathy. Dr. Katherine Payne of Cornell University (USA) has found that elephants bellow to each other at frequencies far below the range of human hearing, with a volume that carries over several kilometres.

Africa is not the only continent of vast herds. When the first Europeans reached North America, perhaps 50 to 60 million bison roamed the plains. A portion of that heritage is preserved in another World Heritage site, **Wood Buffalo National Park**, in Canada, which at 44,800 km^2 is one of the world's largest national parks. Its 5,000 to 6,000 bison are the last remnant of North America's great wild herds. They graze on the salt-adapted grasses and wild flowers of saline meadows, where the puddles are ringed with white rime, and wallow among the grass and sedge of the huge inland delta of the Peace and Athabasca Rivers. They roam through woods of spruce and jackpine, aspen, poplar, tamarack and birch. The bison share the land with hundreds of thousands

◀Wood Buffalo National Park (Canada)

Straddling the border between Alberta and Northwest Territories in northern Canada, Wood Buffalo (44,800 km^2) is one of the world's biggest national parks. On its vast northern plains are found such typical animals of the region as wolf, lynx, American hare, black bear, muskrat, beaver and marten. But it is renowned above all for its free-ranging herd of some 6,000 bison. The Park was created in 1922 to protect the last survivors of the North American bison population and repopulated with bison in the following years. Inscribed on the World Heritage List in 1983, it contains one of the world's biggest inland deltas where the great Athabasca and Peace rivers flow into Lake Athabasca, attracting hundreds of thousands of migrating birds. The winters are long and hard; the summers short and hot. The dry climate is a cause of the forest fires which have helped to create the present mosaic of plant life. The Park management plan is designed to cope with the fire problem and to regulate access, facilities for visitors, the protection of the bison and the exploitation of resources by local people.

Lake Malawi National Park ▶ (Malawi)

Of all the African lakes which are known for their great depth and volume of water, Lake Malawi is perhaps the most important biologically. It has more than 500 species of fish, of which 90 per cent are endemic. One well-known group, the colourful Mbuna, consists of rock-dwelling fish with highly localized home-ranges. This and several other species occur in small populations of a few hundred individuals. The sedentary nature of most of the lake's fish species, including the Mbuna, restricts them to shoreline locations along specific islands. The Lake Malawi National Park, which covers about 94 km^2, includes the relatively large Cape Maclear Peninsula, 3 other smaller mainland areas and 12 islands of varying size. The protection given to lake waters within 100 m of all terrestrial parts of the Park, though it protects only 7 km^2 of water area, preserves the habitat of the endemic species of fish. Several Iron Age sites are located in the Park, which was established in 1980 and inscribed on the World Heritage List in 1984, primarily in recognition of its natural value. Although the Park represents only 0.04 per cent of Lake Malawi, it has contributed greatly to the recognition of the lake as part of Malawi's natural heritage and to the improved management of the resources of the lake as a whole. Lake Malawi National Park was inscribed on the World Heritage List in 1984.

of migrating waterfowl, with nesting whooping cranes, with bear, beavers, muskrat, and wolves. Especially wolves. The bison are regulated by their own natural predators, not by the reluctant calculations of game managers.

The original inhabitants of the Park are the rare, shaggy, forest-adapted wood bison. Many of the herd, however, are plains bison descended from a small group saved from extinction in the last century by the New York Zoological Society. Nowadays it is true for Wood Buffalo Park, as for the Serengeti, that "no significant component is missing; no natural influence is excluded".

More and more of the great parks and large mammals need the active care of human beings. One such case is that of the white rhinoceros of the **Garamba National Park,** in northern Zaire, on the Sudanese border. With a total area of some 4,480 km^2, the Park ranges from fairly dense woods in the south to tree savannah in the north. It has a unique population of the heavy, square-lipped white rhino, whose territory is cut off to the south by Zaire's great rain forest. The Park was founded in 1938 specifically to help save the white rhino, of which there were an estimated 1,000 in 1960. By 1980, when Garamba became a World Heritage site, after two decades of war and poaching there were just twelve white rhinos left.

Rhino horn sells at a high price and attracts mounted bands of poachers armed with high-powered rifles and automatic weapons. The Park staff burn the grass as a preventive measure early in the season, so that the animals take cover in dense riverside woodlands. Otherwise the poachers would set fire to the high late-season grass, and kill their prey as it flees before a wall of flame.

Now, with international support, the staff of Garamba can begin to count their successes. Every rhino wears a radio that transmits its ranging patterns, and the Park monitors the animals by plane. This year's cohort of calves has raised the total population to twenty-three.

It is not only in Africa that war destroys animals as well as people. The last wild European bison was killed in 1919. It lived in Bialowieza forest, which straddles the Soviet and Polish borders. Ironically, the forest itself exists in part because during the Middle Ages there were bloody disputes between neighbouring princes, and the region was almost entirely depopulated. In the fifteenth century it became a royal hunting preserve. Today, the central core of 47 km^2 is almost the only true virgin forest in central Europe.

Once the forest sheltered auroch, the now extinct ancestor of modern cattle, and tarpan, which survived there until the eighteenth century. The bison herd numbered a few hundred animals at the start of the First World War. Soldiers and poachers wiped them out. Then, in 1923, Professor Jan Sztoloman of Poland proposed that efforts should be made to reconstitute the herd. British, German, Polish and Swedish scientists discovered fifty-four bison in the zoos of Europe, though many were hybrids with domestic stock. Careful back-crossing, a pedigree book in which every bison calf is named, and management through winter feeding and summer surveillance have multiplied the herd. Today, some 500 bison wander the cathedral-columned glades of **Bialowieza National Park,** which is now on the World Heritage List. A further twenty live in stalls, in strict isolation as a reserve stock, in case of epidemic. And elsewhere in Europe there are about 200 other breeding centres for bison.

■ Wetland sites

If land is often a scarce resource, so is water, and the world's wetlands are often subjected to a tug-of-war between different uses. This is illustrated by the five World Heritage sites described in this section: two lakes, one wild river, and two low-lying swamps.

Lake Malawi, which is over 760 metres deep, was created only some 5,000 years ago in a fissure of the Great Rift Valley. Below the plunging mountainside the valley is rich and fertile. Around the edge of the lake are small farms and villages. Fishermen paddle their boats, ply the lake in craft powered with new outboard motors, or haul ashore U-shaped nets containing rainbow-hued fish belonging to species that exist nowhere else on Earth.

Perhaps two dozen species of African fish entered Lake Malawi after the cataclysm of its birth. Now, in an evolutionary instant, their numbers have risen to between 500 and 1,000 species, virtually all of them endemic.

The explanation for this multitude of species seems to be that most fish have a great love of home. The shore of Lake Malawi is divided into rocky points and sandy bays. Fish which live among the rocks rarely cross the sand to the next set of rocks, and sand-loving fish, though more mobile, still do not travel far. The lake is thus divided into a set of discrete habitats, each with its own, limited gene pool. The fish of each point or bay are different.

If Lake Malawi demonstrates what isolation can do to produce species, **Lake Ichkeul** in Tunisia shows how one site can be a crucial link in an international chain of habitats. It is a winter refuge for vast numbers of migrating waterfowl. Almost the entire population of Europe's greylag geese winter there, as well as large fractions of the populations of pochard, widgeon and shoveler

Photo M.Huet © Hoa-Qui, Paris

ducks. One census reported as many as 188,000 coots. In summer, when the migrants leave, some 600 of the rare and shy white-headed duck remain to breed and dabble among the reeds with their sky-blue bills. Almost any European or North African bird can be seen here at some season.

Even Lake Ichkeul's water is not isolated. It lies near to the Mediterranean, and while runoff from rivers normally replenishes the fresh water, in seasons and years when the flow slackens off, saline water seeps in from the sea. The reeds and aquatic life are adapted to the changes, but now there is increasing human pressure to dam the rivers and divert their water for irrigation. Studies suggest how sluices might help to control the freshwater flow and allow the coexistence of both lake and irrigation, and there is hope that agreement will be reached.

Sometimes, however, wetland sites are the focus of a direct confrontation. One notable case, a proposal to dam the lower Gordon River in Tasmania, Australia, and its tributary, the Franklin, to produce electric power for bauxite refining, ended with a search for another site for that purpose. Tasmania is rich in National Parks. The 7,693-km^2 group of **Western Tasmania Wilderness National Parks** contains one of the world's last great temperate rain forests. This is an area of quartzite peaks, limestone caverns, and rivers whose rapids foam through deep gorges. Loggers sought out the region's Huon pines, some of which are 2,000 years old. Botanists, on the other hand, treasure the forests of *Nothofagus*, the southern deciduous beech, which is a relict of the era when Tasmania, Australia and Antarctica were all joined to South America and Africa. This huge southern continent of Gondwanaland was the home of the southern beech, which survives only in a few high rainfall zones like the lower reaches of the Gordon and Franklin rivers.

Djoudj National Bird Sanctuary, in the delta of the Senegal River, illustrates how tough decisions about the use of natural wonders may be. A Sahelian country, beset by drought in the interior, Senegal faces the problem of apportioning land between nomads and settled farmers, as well as meeting its needs for irrigation and power. Large-scale dams are being built on the Senegal River, thus threatening the ecological balance in the delta park of Djoudj, which has three million visitors a year—the palaearctic birds which land after a gruelling 2,000-km flight across the Sahara. Pelicans, herons and ducks paddle beside typical desert mammals. The endangered Dorcas gazelle has even been reintroduced here, since this is one of the few Sahelian habitats where wild grazers can hope to survive.

The Djoudj delta is subject to a desert people's needs for water. The **Sundarbans,** the wilderness of mangrove trees at the mouth of the Ganges in India, is subject to mountain peoples' needs for fuelwood, and the needs of millions of plains peoples for timber. Building wood is so expensive now in India that it is sometimes cheaper to use steel. In the Himalayas, the trade-offs between natural forest for villagers' use, and commercial pine for cash-cropping, have provoked legal battles, riots, and social movements like the Chipko, the women who hug trees to stop them being felled.

The deltaic mangrove system of the Sundarbans covers some 10,000 km^2 of India

Sian Ka'an (Mexico) ▶

The Sian Ka'an Biosphere Reserve is located some 150 km south of the tourist centre of Cancún, on the ancient limestone plain of the Yucatán Peninsula. The Reserve's 528,000 hectares include tropical evergreen and semi-deciduous moist forests, marshes and mangroves, as well as a large marine section with the second longest barrier reef in the world. There is an abundance of wildlife, including 1,200 plant species, 5 species of cat (jaguar, puma, ocelot, margay and jaguarundi), the Caribbean manatee and Geoffroy's spider monkey. Sian Ka'an means "origin of the sky", the name given to the region by the Maya peoples who lived there in the 5th century AD. Over 20 Maya archaeological sites have been registered in the Reserve. Today some 800 people live there, some of them descendants of the Maya. Most live from lobster fishing and have organized themselves into co-operatives, which regulate the number of fishermen and the size of the catch in order to maintain this resource. Local people are also working with scientists on a major ecological research programme. A model farm has been established to develop intensive cropping techniques, with the aim of reducing the land area to be cleared for agriculture. The site, which was inscribed on the World Heritage List in 1987, is a good example of the combined conservation, research and development functions of a Biosphere Reserve. Right, gathering of pelicans and terns.

Photo J.P. Ferrero © Jacana, Paris

◀Sundarbans National Park (India)

The Sundarbans, extending over 10,000 km^2 of land and water across India and Bangladesh, is part of the world's largest delta, formed from sediments deposited by three large rivers, the Ganges, the Brahmaputra and the Meghna. The core area in west Bengal, India, was established in 1984 as the Sundarbans National Park, and inscribed on the World Heritage List in 1987. Situated in an area where cyclones and tidal waves are relatively frequent and intensive, the Sundarbans forms a barrier which protects the interior regions from these natural hazards. Some of the tidal waves whose force is dispersed within the plains of the delta can reach a height of 75 m. The low mangroves, salt water forests, beach forests and sand dune vegetation are the habitat of a variety of fauna. Most importantly, they are the home of the largest population of the Bengal tiger (left), estimated at 264 in 1963, in India. Aquatic mammals such as the Ganges dolphin, the Indo-Pacific hump-backed dolphin, and the finless porpoise, also frequent the area. The setting for the most intense human-wildlife conflicts in India, the Sundarbans is a site that symbolizes mankind's commitment to protect the Bengal tiger.

Photo Angel Araújo © Incafo, Madrid

and Bangladesh. The Indian part is a World Heritage site covering 2,600 km^2 in a strictly controlled nature reserve, the **Sundarbans National Park**, which contains India's single largest population of tigers. When the reserve was founded in 1973, there were 153 tigers; by 1980 there were 264, and the numbers continue to grow.

The mangrove habitat is both sea and land. Five species of dolphins and porpoise and the rare saltwater crocodile live in the Sundarbans. Tigers, which elsewhere hunt wild antelope and the wild cattle called gaur, are here known to catch fish, monitor lizards, and sea turtle. As India's Project Tiger emphasizes, tigers are the index of the health of their habitat. If people cut the mangroves for wood, or drain islands for agriculture, or even lose all control of the rivers' flood régime, the tiger will be the first to go.

The world's wetlands face many threats, from drainage to floods. Their resources may be diverted to agriculture and power generation. They may be polluted by runoff of chemical toxins and fertilizers. No natural site is now isolated from human influence, so we must pioneer forms of management which try to reconcile diverse needs, without waiting for confrontations to develop.

■ Biosphere Reserves: living in harmony with nature

The purpose of a Biosphere Reserve, as envisaged in Unesco's Man and the Biosphere (MAB) Programme, is to reconcile the needs of people and natural habitats. This concept is today being used to conserve World Heritage natural sites. Ideally, a Biosphere Reserve includes a core of minimally modified natural habitat, outside which lie one or several buffer zones, which people use in such a way that the core continues to exist. Biosphere Reserves form a worldwide network which aims to conserve biological diversity and to provide information which will help people to live in harmony with nature. The key to success is sustainable buffer zone use, which provides both economic benefit and an environmental ethic for local people.

Such use may, in fact, stem from local traditions. The **Sian Ka'an Biosphere Reserve** is located in Mexico's Yucatán Peninsula. It protects more than 5,000 km^2 of tropical moist forests, marshes, mangroves, and coral reef. Within the Reserve live about 800 people, descendants of the Maya Indians who called the region Quintana Roo, and left temple sites which date from the 5th century BC. The modern Maya are mainly lobster fishermen, but they practise age-old farming methods, and gather traditional plants for medicine, food and housing. There is an entire research station dedicated to understanding and improving the Reserve, which also means learning from its people.

Biosphere Reserves are intended to preserve typical samples of each of the planet's ecosystems. Some are locally important, but not spectacular enough to be included on the World Heritage List. There are forty-three Biosphere Reserves in the United States alone, but only five of them are on the

World Heritage List: **Yellowstone,** and **Everglades, Redwood, Olympic** and **Great Smoky Mountains National Parks.** The Great Smokies of North Carolina are tiers of wooded Appalachian hills, which, seen from a distance, are covered with a blue haze which gives them their name. They stood south of the great glaciers of the Ice Age, and a number of plants which survive there, such as ginseng, are closely related to plants found in central China. Amphibians also proliferate in the Great Smokies, including twenty-two kinds of salamander, the largest of which is the hellbender, which can be 75 centimetres long.

This wilderness of oak and mountain laurel, whitetailed deer and black bear, is far from free of people. There is no question of driving out the residents or of limiting tourist access, but building and clearing must be carefully controlled in order to maintain the tourist revenue that supports the region. Above all, pollution from both automobiles and distant industries can change the very nature of the soil. It will be a sad commentary on our sense of values if we let acid rain wipe out the forests which even the Ice Age spared.

A variety of strategies are needed for the development of conservation and management systems. Sometimes this means massive investment projects in the nearby region to offer the people an alternative way of life. Sometimes, on the other hand, it means reinforcing the support base of traditional life.

Soon, it seems, we may need a much more complicated system, the cluster Biosphere Reserve. According to the cluster concept, the management of a number of separate areas is co-ordinated to perform the functions of a Biosphere Reserve, so that a number of different ecological and socio-economic situations are englobed within one biogeographical province. Such innovative macro-conservation offers some of the flexibility needed in a rapidly changing world.

Three more World Heritage sites—St. Kilda, Tassili n'Ajjer, and the La Amistad park—serve to illustrate the dangers and the opportunities facing Biosphere Reserves.

St. Kilda is a place where the local culture did not survive. It is a group of small islands some 160 km west of Scotland. Its sea-cliffs, which rise up to 430 metres above the pounding Atlantic waves, are the highest in Europe. St. Kilda is also a largely man-made landscape. It was settled at least 2,000 years ago, and Viking sagas record a voyage there in AD 1202. The people led a hard life. They ate fulmar and other seabirds, and dressed in wool from their flocks of sheep. Until the eighteenth century, traditional dwellings were stone "black houses", where livestock and manure were kept in an outer room.

Tourists, merchants and naturalists began to visit the islands, and a school and medical posts were built. Knowledge of how to survive on fulmar and barley—as well as any desire to do so—was forgotten. On 29 August 1930, the last remaining islanders left for the Scottish mainland. Today there are only a military base and a weather station, vast colonies of seabirds, and the Soay sheep which have reverted to the ranging patterns of their wild ancestors.

The St. Kilda islanders adapted to changing social conditions; the Tassili plateau of Algeria bears witness to changes in climate

St. Kilda (United Kingdom) ▶

This tiny archipelago lies in splendid isolation in the Atlantic Ocean, some 160 km off the west coast of Scotland. It originates from an ancient volcano which has been weathered and glaciated to produce a bare, rocky group of islands with dramatic cliffs which rise vertically to 430 m above the waves and are the highest and most spectacular in Europe. St. Kilda demonstrates how the ecological isolation of small populations of animals can result in genetic divergence: the tiny St. Kilda wood mouse and the St. Kilda wren are different from their mainland cousins and found nowhere else. The seabird populations form one of the largest concentrations in the North Atlantic, and include gannets (52,000 pairs), fulmars (30,000 pairs) and puffins (300,000 pairs). Over 1 million seabirds may live on St. Kilda at any one time. In spite of the isolation and inclement living conditions, St. Kilda was inhabited more or less continuously for 2,000 years: local people harvested seabirds for their eggs and meat, and spun the wool of the Soay sheep, an ancient rustic breed which now lives in the wild. In 1930 the islanders finally left their home for the mainland. Today St. Kilda, which was inscribed on the World Heritage List in 1986, is protected as a National Nature Reserve. The old village has also been restored for the few tourists who manage to land in the summer months to admire the stark landscape and wildlife of this remote archipelago.

View of Great Smoky Mountains National Park, United States ▼

Photo Naud © AAA, Paris

Photo © The National Trust for Scotland, Edinburgh

itself. Isolated in the sands of the Sahara, **Tassili n 'Ajjer** is a rocky region some 100 km wide by 700 km long. Pinnacles of banded rock sprout from the massif, a few pools of "fossil water" offer relief, and, strangely, a few springs of volcanically heated water bubble out. Several hundred Tuareg nomads, dubbed the "Blue Men" of the Sahara because of their indigo dyed clothes, drive their herds between the oases.

In this desert museum, rock paintings dating from 8,000 years ago, when the climate was far moister, show giraffe, buffalo, elephant, hippopotamus, rhinoceros. Around 6,000 years ago, these depictions of savannah wildlife give way to representations of piebald white and red-ochre cattle, which must have been domestic herds. Portrayals of horses on the rock walls date from about 3,000 years ago, and depictions of the first camel caravans were made around AD 200. Today, the only survivors of this kinder age are a few cyprus trees in the canyons, their trunks 5 metres in diameter, and strange relict fish. There were crocodiles, too, but the last was killed in the 1940s.

As both our societies and our climate seem bound to change increasingly rapidly in the coming decades, we can look back for instruction to St. Kilda and Tassili n'Ajjer. We can also look ahead, at one of the world's great bridges from North to South.

Talamanca Range-La Amistad Biosphere Reserve (Costa Rica) connects two countries, two oceans and two continents. Its name comes from a friendship ("Amistad") zone declared between Costa Rica and Panama, and it includes some 8,000 km^2 of land set aside for conservation. The Biosphere Reserve stretches from the Atlantic to the Pacific, here little more than 150 km apart. It includes one of the most diverse biotas on Earth, because it was here that the plants and animals of North America came into contact with those from the south, when upthrusting volcanoes connected the two great continents. The area is still thrusting upward: earthquakes and vulcanism have lifted the highest peaks above 3,500 metres. There is dry woodland on the Pacific coast and true jungle on the Atlantic side, a haunt of jaguar which can only be penetrated machete in hand. On the heights there is magnificent pine cloud forest where the quetzal flies, and, ultimately, alpine rock gardens where furry lycopodium clubmosses huddle against the cold. La Amistad's inner valleys are almost untrodden by man: besides the rich variety of known species, there are certainly many more creatures to be discovered.

La Amistad covers 10 per cent of Costa Rica, and is home to more than 40 per cent of Costa Rica's Indians. People of the Bribri, Cabecar, Brunca and Guaymi tribes live within the Reserve. The Indians are well aware of Western lifestyles, wear Western clothes, and would like their school buildings to be made of brick, even if the bricks have to be flown in by helicopter.

The World Heritage Convention is one way of linking the interests of people within each region to the interests of the world community. No one ever said it would be easy. But it is clearly essential, if we wish to preserve the world's wild places, not just as relicts of the past, but as bridges to the future. ■

ALISON JOLLY, *of the United States, is a zoologist who has been Visiting Lecturer at Princeton University since 1987. She is the author of several books including* Lemur Behaviour. A Madagascar Field Study, *Chicago University Press, 1966;* A World Like Our Own: Man and Nature in Madagascar, *Yale University Press, 1980; and* The Evolution of Primate Behaviour, *Macmillan, New York, 2nd ed. 1985.*

Photo Candy Lopesino-Juan Hidalgo © Incafo, Madrid

The conservation of ancient cities

BY MOUNIR BOUCHENAKI

AMONG the many opportunities available throughout the world to the traveller or tourist of today, one of the most exciting is the possibility of visiting the remains of ancient cities and of lifting a corner of the veil that shrouds the civilizations of the past in mystery. Yet we are light years away from the era of romantic reverie among ancient ruins, from the time when the German poet Schiller could declaim:

Are we to find again that which was lost?
Come Greeks and Romans, come!
Lo, ancient Pompeii is restored,
The city of Hercules is built anew!

Since the end of the nineteenth century, and above all during the twentieth, the development of the historical sciences and archaeological research, aided and abetted on occasions by chance, has led to decisive progress in our knowledge of ancient sites. Some sites, like those of Troy, in Asia Minor, and Nineveh, in Mesopotamia, had, to be sure, been brought to light at a time when enthusiasm for vanished civilizations, far from being widespread, was limited primarily to curiosity-seekers and a handful of scholars.

In the contemporary world, however, there is clear evidence of an upsurge of interest in ancient ruins, in their safeguard and protection. How else can we explain the vast movement of international solidarity that sprang up during the 1960s and was behind the rescue of the famous temples of Philae and Abu Simbel in Upper Egypt from the waters of the Nile?

This feeling of solidarity enabled Unesco to develop the concept of a common human heritage and to establish a World Heritage List on which a number of major archaeological sites are inscribed. Sites such as Aksum (Ethiopia), Chan Chan (Peru), Hampi (India), Sigiriya (Sri Lanka), Teotihuacán (Mexico) and Timgad (Algeria) are so prestigious that it hardly seems necessary to explain why they have been inscribed on the World Heritage List, or why the countries in which they are situated have decided to safeguard them. The one thing they have in common is that they are archaeological sites, that is to say that, apart from their attendants, they are entirely uninhabited and the only sound now heard in their streets is the echo of visitors' footsteps. They could be dubbed "dead cities", since at some point in the history of each one of

them, for reasons that are in some cases not clear, all activity ceased despite the fact that their ruins bear eloquent witness to the ingenuity and vitality of the people who dwelt there. These cities, once important centres of civilization, are now the domain of archaeologists and curators who supervise their preservation and their presentation to the public.

A rapid survey of these ancient cities reveals first of all the existence of great urban civilizations each of which is typical of the part of the world in which it is located. Thus, the ancient colony of Timgad, in Algeria, is a city whose structure reflects the values of Roman civilization into which has been incorporated the dynamic force of the indigenous people.

This site, whose symmetrical layout is still quoted as an example in architectural and town-planning manuals, is a product of a comprehensive theory of town-planning moulded by Oriental and Hellenistic influences. This theory precisely encapsulated the idea that the Ancients had of what a city should be. As the Greek geographer Pausanias wrote in the second century AD: "How could I grace with the name 'city' a place which has no theatre, no agora, no assembly rooms and no gymnasium?"

The plan and layout of the settlements at Aksum, Chan Chan, Hampi, Sigiriya and Teotihuacán have been preserved—like those at Timgad—although they belong to different culture areas and different historical periods, and are located in different parts of the world. They represent a valuable asset for modern man, since contemporary societies appear to have become aware of the values attached to archaeological remains, whose disappearance would be an irreparable loss for all humanity.

◀ Teotihuacán (Mexico)

The pre-Columbian holy city of Teotihuacán is located in the mountains 50 km north-east of Mexico City. Founded between the 1st and the 3rd century AD, the city extended over 36 km² at the height of its development, and supported a population of 200,000. The imposing ceremonial centre marks a high point in the art of Mexican classical civilizations, with its main building, the Pyramid of the Sun (left), rising over 75 m from a 350 m² terrace; the Pyramid of the Moon, 42 m in height; and the Temple of Quetzalcóatl, the plumed serpent of the Aztecs. The city's 4,000 buildings of volcanic rock, stuccoed with mud or lime plaster, and its finely-sculpted palaces, were laid out in a rectangular grid pattern based on principles of cosmic harmony. A wide avenue bisected the city and linked markets, monuments and plazas. The main industry was the production of obsidian, from which cutting tools were made for barter. In the 6th century, Teotihuacán controlled a powerful State with extensive territory, but around the year 650, for reasons still obscure, the city was burned down and subsequently abandoned. When, in the 14th century, the Aztecs discovered the ruined metropolis with its enormous pyramids, they thought that it must have been constructed by the gods, and accordingly gave it the name Teotihuacán—"Place of the Gods". The site was inscribed on the World Heritage List in 1987.

Aksum (Ethiopia) ▶

Situated in the Tigre region of northern Ethiopia, the city of Aksum was the capital of a famous kingdom of Antiquity to which it gave its name and which is described in a 3rd-century-AD Greek text as the "third kingdom of the world". The Romans also knew of Aksum at that time. The city lay on a trade route along which passed such precious commodities as rhinoceros horn, ivory, tortoiseshell and obsidian. Many traces have survived of the past splendour of Aksum, covering a vast area. They include gigantic stelae, the highest of which (right) stands 33 m high and is the largest known obelisk ever carved and erected, stone columns engraved with Ethiopian legends, and royal tombs. Legend has it that beneath one tumulus is the tomb of the Queen of Sheba. In the western part of the site are the ruins of 3 ancient castles built sometime during the first millennium of the Christian era, and an 18th-century basilica that provides valuable testimony about Ethiopian architecture of that time. As part of the international campaign for the preservation and presentation of the cultural heritage of Ethiopia, restoration work will soon be carried out at Aksum, which was inscribed on the World Heritage List in 1980.

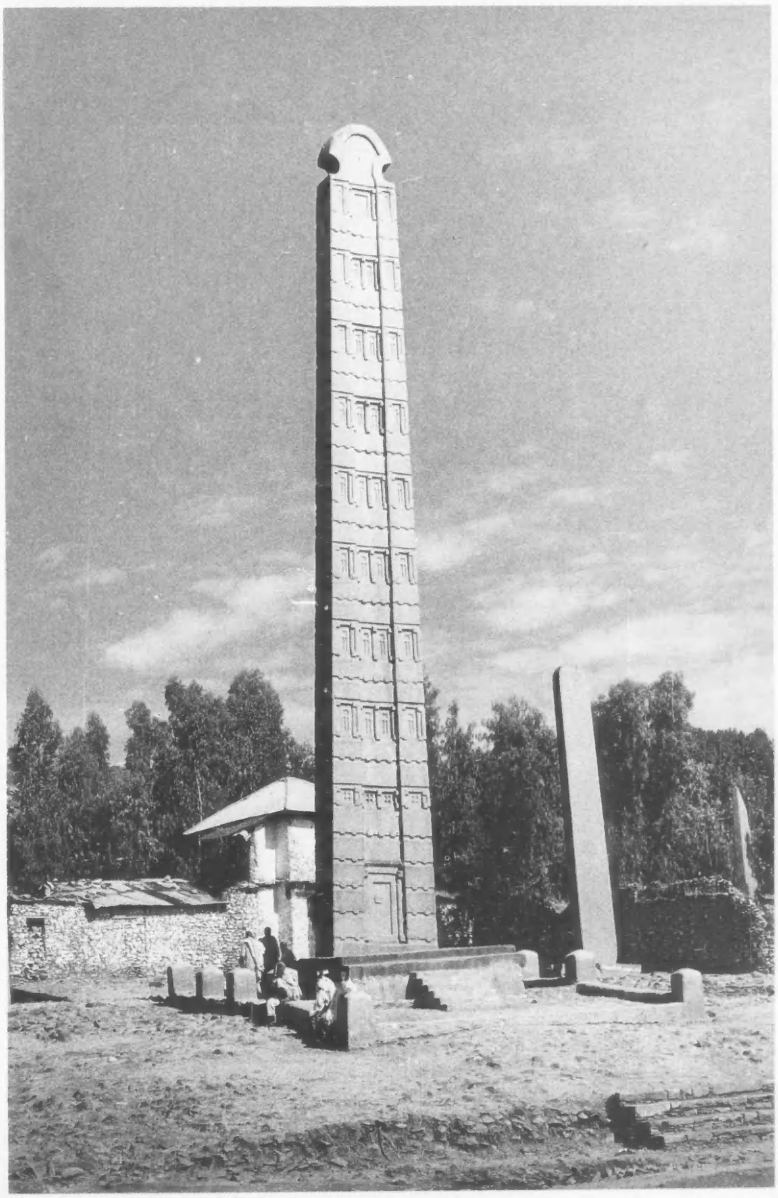


Photo Roland and Sabrina Michaud © Rapho, Paris

At a given moment in the human story, each of these ancient cities was the setting for a specific way of life which bears witness to the activities, resources, beliefs and organization of mankind, in a word, to culture. It is the duty of the international community to preserve and not to disfigure these sites.

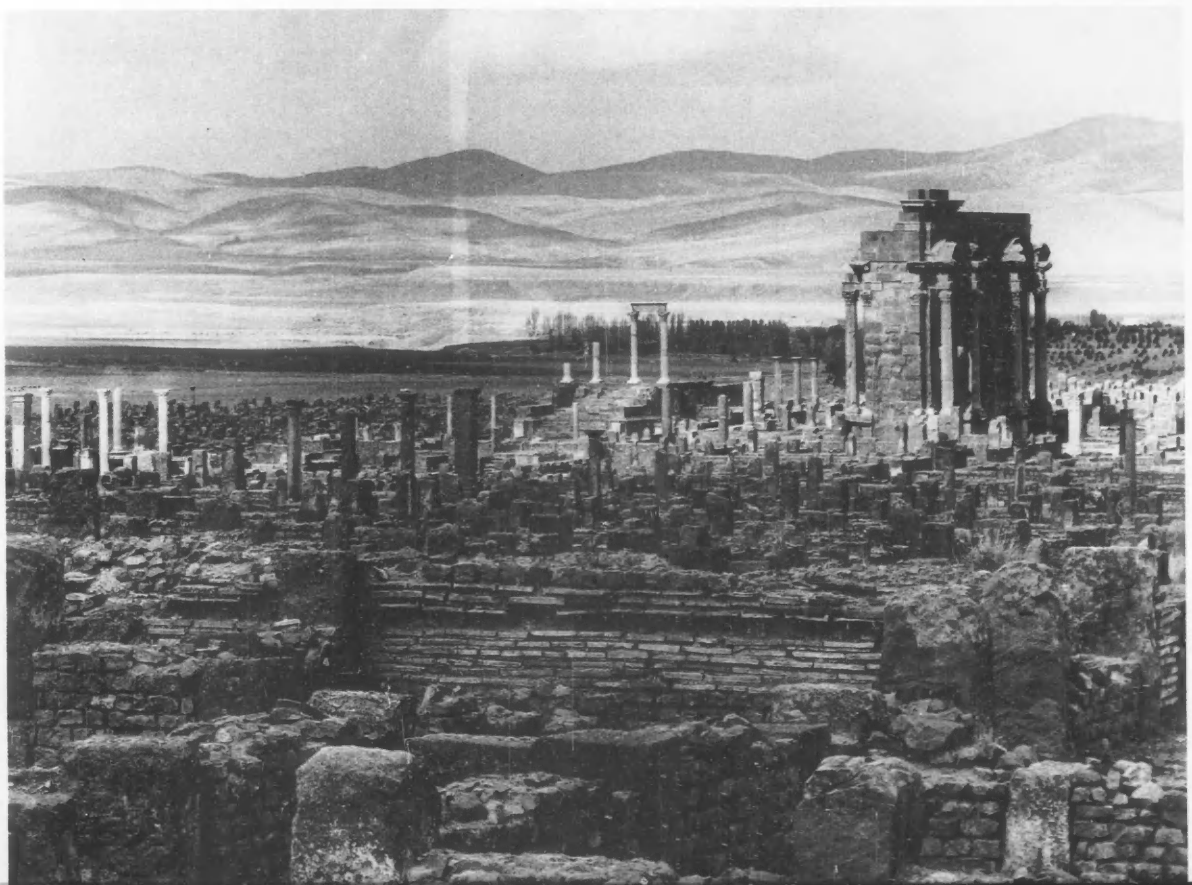
Although documentary sources for ancient times are generally speaking rare, the presence of substantial remains buried in the soil or visible in the landscape, such as the giant stelae of Aksum or the temples of Chan Chan as well as the ruins of the other cities mentioned, makes it possible to compile data which deepen our understanding of how people lived, worked and worshipped in the past. This stock of knowledge must be safeguarded, a task which is not always easy. A country in which there are sites that usually cover hundreds of hectares, or even, as at Hampi and Teotihuacán, tens of square kilometres, is faced with a number of problems such as their maintenance and supervision. The inscription of such sites on the World Heritage List reduces the scale of the dangers that they face, but it does not eliminate them entirely.

Those responsible for the heritage are fully aware that the conservation of sites is often regarded as an activity quite distinct from the realities of modern life, particularly by regional planning authorities. As a result these great archaeological complexes

Photos © Drillaud-A.P.I., Prades

Timgad (Algeria)

Timgad is the modern name of the Roman city of Thaugadi, which was founded by the emperor Trajan in AD 100 as a defensive military camp north of the Aurès mountains. Thaugadi grew rapidly. After the Vandal invasion in the 5th century, it was destroyed by the mountain people of the Aurès, then enjoyed a period of revival in the 6th century under Byzantine occupation before being abandoned. Archaeological excavations carried out since 1880 have revealed the ruins of a city laid out according to the finest and most rigorous principles of Roman urban planning and containing such characteristic Roman public buildings as a forum, capitolium (temple of Jupiter, Juno and Minerva), theatre, baths, temples, markets and a public library. The remains of churches show that Christianity was introduced to Timgad in the 3rd century. The conservation and presentation of the site raise a number of problems. The original extent of the settlement must be precisely determined, taking into account those parts which have not been fully excavated. It has been decided to remove the best mosaic floors from the houses to the site museum in order to preserve them from extremes of temperature. An annual music and drama festival has been established at Timgad by the local authorities, but certain events which caused damage to the ancient theatre have been halted. Timgad was inscribed on the World Heritage List in 1982. Below, general view showing the triumphal arch; left, a votive stela.



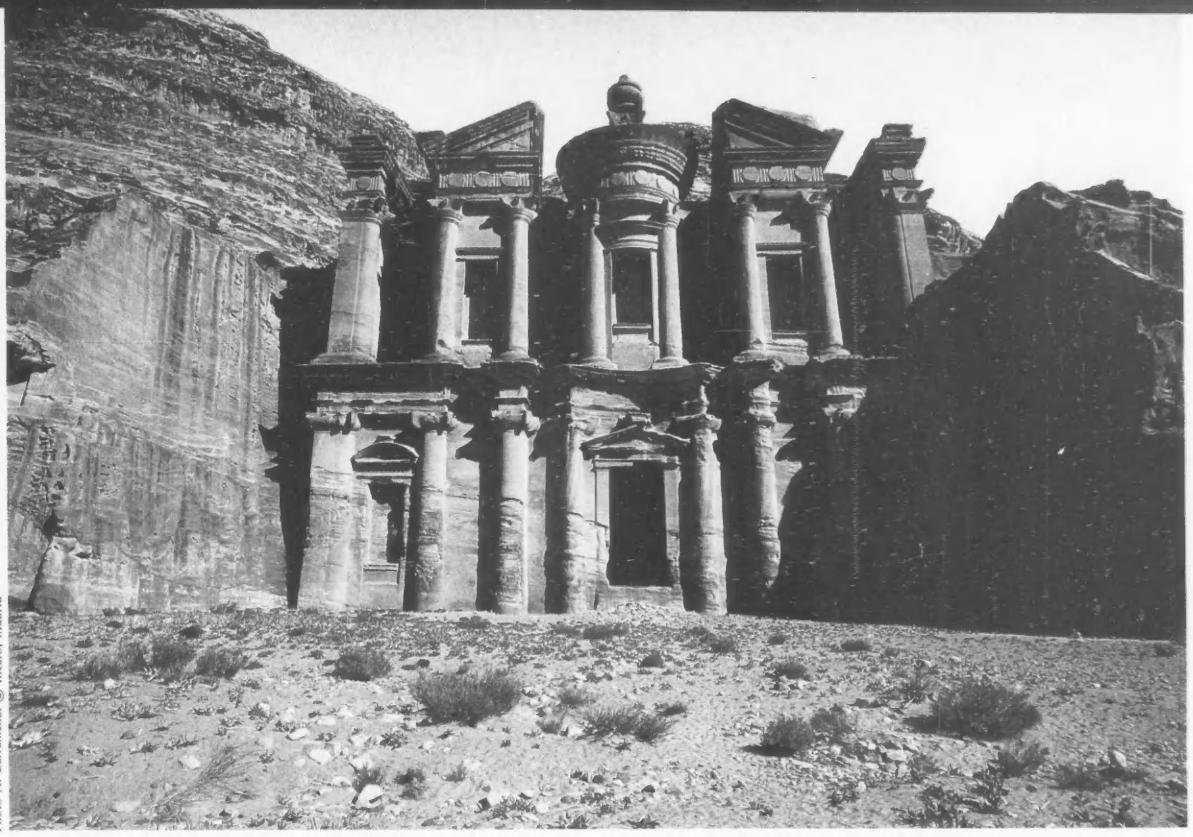


Photo A. Larramendi © Incafo, Madrid

▲

Petra (Jordan)

Half-carved, half-built in spectacular pink sandstone cliffs south of the Dead Sea, this ancient Arabian city was the capital of the kingdom of the Nabataeans (4th century BC-2nd century AD). Situated at the meeting point of 2 caravan routes, it became an important centre for trade in Arabian incense, Indian spices, Chinese silk, Egyptian gold, and Nubian ivory and slaves. Between the 1st century BC and the 1st century AD, Petra reached the height of prosperity and built its first monuments. It became part of the Roman empire in AD 106, and enjoyed a further period of greatness until the development of alternative trade routes dealt a death-blow to its economy. Later, Christians inhabited the city and crusaders built fortifications which can still be seen today. Access to Petra is through a narrow 2-km-long ravine. Temples, tombs and palaces hewn from the sandstone form a magnificent setting in which Oriental traditions blend with the Graeco-Roman style. Today adverse atmospheric conditions and erosion are damaging the ruins. Specialists have studied the reasons for the deterioration of the stone, and a complete photogrammetric survey of the site has been carried out. The World Heritage Committee has recently provided the Jordanian authorities with financial aid for the preservation of Petra and the restoration of the Palatial Tomb. Petra was inscribed on the World Heritage List in 1985. Above, *ed-Deir* ("the convent"), a rock-hewn monument outside the city which may have been a royal tomb (2nd-3rd centuries).

are exposed to the risk of destruction. The development of infrastructures, the building of tourist accommodation and the use of monumental sites for the staging of public spectacles without ensuring that the necessary precautions are taken, are all dangers that it is difficult for a national conservation official to fight against. Added to this is the constant threat of theft by clandestine treasure-hunters and unscrupulous pseudo-researchers, especially in sites that extend over a large area and are therefore difficult to supervise.

The inclusion of a site on the World Heritage List can sometimes carry weight with decision-makers, since the need to respect the criteria that classification entails is backed up by the moral force of the international community. However, there are many examples throughout the world of conservation officials and those responsible for development (such as town-planners, architects, and tourist authorities) working closely together to preserve the archaeological heritage and to find solutions to the complex problems created by the need to protect ancient remains. The archaeological site of Carthage is a case in point for, despite the huge sums of money at stake in the property market, it has been possible to create an archaeological park and a building-free zone and thus to safeguard structures vital to the understanding of the development of ancient cities.

Another problem may arise within the very services responsible for safeguarding the heritage, when, with the legitimate objective of advancing knowledge, they are obliged to undertake a dig in an unexplored section of an archaeological site. Remains are obviously better protected if they are left underground, but where a site has been largely uncovered the stratigraphic sampling method, essential for example for the confirmation of a dating, will have the least harmful effect on conservation.

Another subject of debate among specialists is how far it is permissible to go in restoring or reconstructing ruined structures in order to present them to the public. The problems that arise with regard to sites of such exceptional quality that they have earned inclusion on the World Heritage List are leading to a reappraisal of attitudes and to new approaches. Ultimately, the best way to implement a policy of safeguarding archaeological sites is to ensure that people know about them and visit them, and more use should be made of the media for this purpose, particularly as far as young people are concerned.

We could well apply to archaeological sites the remark André Malraux once made about the past in general: "We do not really know why we are attached to our past, yet we know very well that we are and that today all nations are attached to theirs." ■

MOUNIR BOUCHENAKI *is a staff member of Unesco's Cultural Heritage Division. A historian and archaeologist who was formerly chief curator in the Algerian Antiquities Service, he has worked on a number of archaeological sites in the Mediterranean basin. He is the author of* Cités Antiques d'Algérie *(Algiers, 1978),* Fouilles de la nécropole occidentale de Tipasa *(Algiers, 1976) and other studies and articles on archaeological themes.*

Time regained

A historical perspective on cultural sites and monuments

BY GEORGE MICHELL

Photo J. de Vergara © Incafo, Madrid

WHILE the cultural sites of the World Heritage List may be documented, analysed, catalogued and subjected to the hopefully beneficial processes of restoration, they must never be divorced from the destiny of man. These sites are permanent records of human endeavour, the material artefacts of world history. Here are displayed the deeds of mankind, from the noble and the spiritual to the heroic and the tragic. The cultural sites are visible demonstrations of the survival of the past into the present era. The World Heritage Convention is a valid attempt to recognize the unique qualities of this heritage and safeguard its survival into the future.

Many of the great monuments and cities of the past, whether ruined or still in use today, are inextricably bound up with the careers of powerful individuals. Only emperors and princes, military commanders and generals, and popes and bishops could command the considerable economic and artistic resources that were essential for the erection of large-scale monuments, let alone the laying out of the public spaces and ensembles of buildings required for a city centre. Though many of the cultural sites on the World Heritage List have obviously been identified for the aesthetic quality of their architectural or urban character, their historical dimensions must never be forgotten.

The royal individuals who built splendid residences for themselves were sometimes visionaries. Their architectural legacy is often imposing and inspiring; sometimes it is intended to intimidate. Architecture here is truly in the service of mundane purposes. This is true of many of the palaces identified in the World Heritage List, from those of the Ming emperors in China, and the Mughals at Fatehpur Sikri in India, to the châteaux of the French kings at Chambord, Fontainebleau and Versailles, or the great houses of the English lords as at Blenheim. No less concerned with the expression of power are the ceremonial centres at Persepolis in the Islamic Republic of Iran, Teotihuacán in Mexico and Hampi in India, or the Great Wall of China and the fortifications of King Edward I at Gwynedd in Wales.

Governing nations in almost all periods of world history were concerned to develop an architecture based on power. Their military, administrative, judicial and ceremonial constructions are reminders of past ambitions, sometimes in eras of enlightenment, at other times in eras of oppression, but almost always in periods of intended glory. The ensembles of buildings that form the cores of such historic cities as Istanbul in Turkey, Aleppo in the Syrian Arab Republic and Fez in Morocco, for example, are testaments to continuous state patronage of urban architecture over many centuries. The same is true for the European cities of Toledo, Florence, Budapest or Cracow, in addition to

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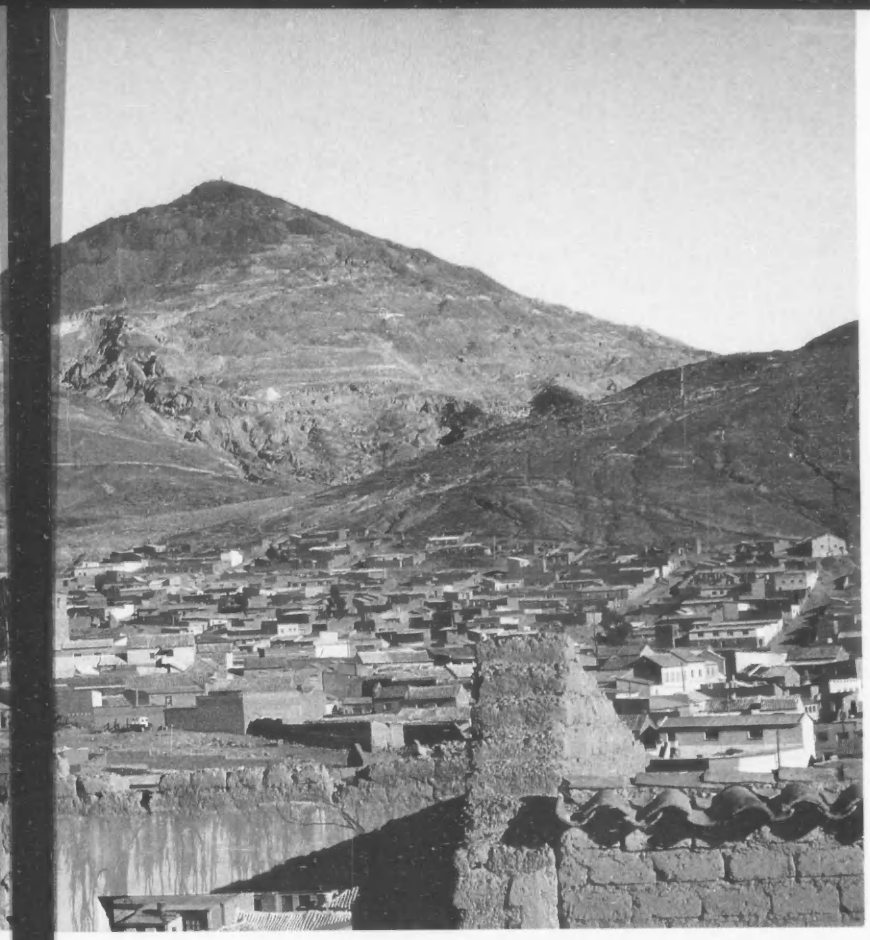
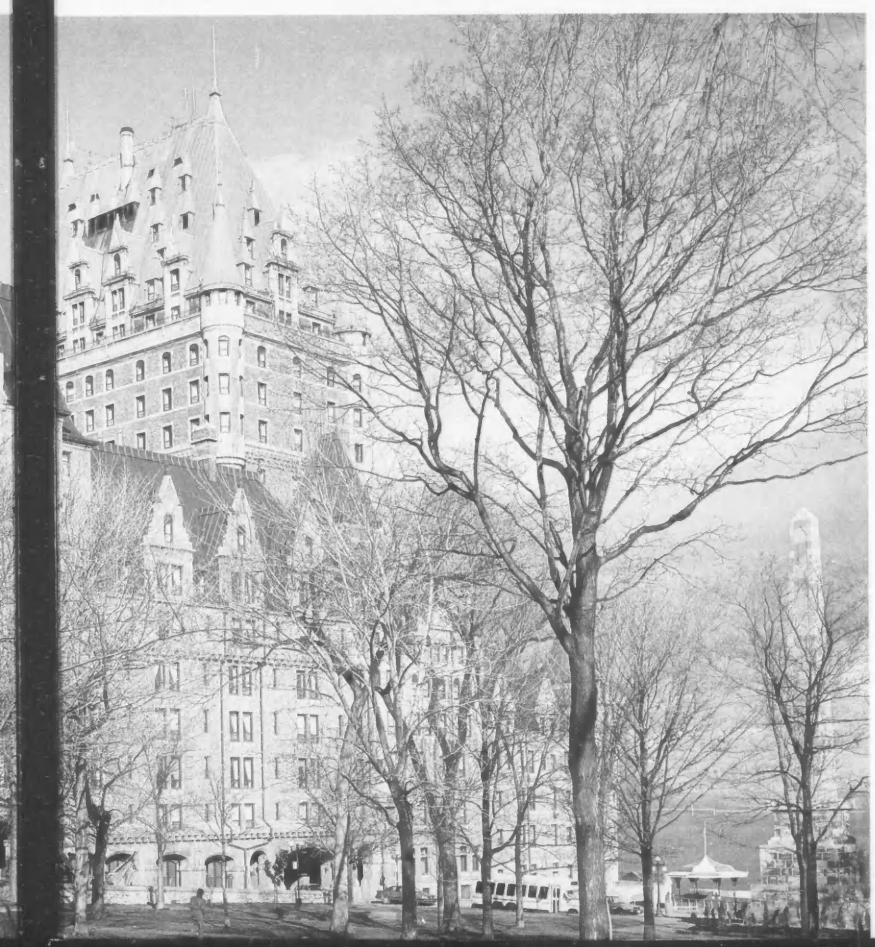
Photo Luis Alonso-M.G. Fernandez © Incafo, Madrid



◀Potosí (Bolivia)

The destiny of Potosí, a small hamlet perched at an altitude of 4,000 m in the Andes, was transformed when its silver lodes, the richest in the New World, began to be intensively mined in the 1540s. By the 17th century, the new town had a population of 160,000 colonists and 13,500 Indians who worked in the mines under the *mita* system of forced labour. Mining activity, which only slowed down after Bolivia became independent in 1825, has left spectacular traces in the city and its surrounding region, including the dams that controlled the water supply to the ore-grinding mills, and the royal mine complex, the biggest and best conserved of some 5,000 mines that pitted the high plateau and its valleys. In the colonial city are monuments in the baroque style mingled with Indian influences which spread through the central Andes. They include more than 20 churches, gracious patrician houses whose luxury contrasted with the bare simplicity of the *rancherías* in the indigenous district, and the royal mint whose stamp marked the thousands of tons of silver which made Potosí a pivot of the European economy in the 17th and 18th centuries. In the last ten years, Unesco and the United Nations Development Programme (UNDP) have been helping the Bolivian authorities to protect Potosí. An inventory of the historic monuments has been made and historical studies have been undertaken. Work will continue in the next few years as part of a UNDP/Unesco project. Potosí was inscribed on the World Heritage List in 1987.



◀Historic Quebec (Canada)

The capital of New France was founded in 1608 by Samuel de Champlain on a plateau overlooking the St. Lawrence river, a headland later known as Cape Diamond. In 1759, the city, which was strategically important for transatlantic trade, fell under British domination which soon extended throughout Canada. The population of Quebec grew rapidly because of its busy port, and two towns developed, each with different functions. The older Lower Town is the business and merchant shipping district. It includes houses dating from the 17th and 18th centuries and the church of Notre-Dame des Victoires. The Upper Town became the centre of administrative and religious life. Parts of the original structures of the convents of the Ursulines, the Jesuits and the Recollets, which were built there in the 17th century, have survived. Quebec is thus an exceptional example of a North American fortified colonial city and an important landmark in a crucial period in the history of the continent. The historic area of Quebec was inscribed on the World Heritage List in 1985. The Quebec authorities are committed to the safeguard and presentation of all the elements which qualify Old Quebec as a World Heritage site. But since the historic area forms part of the city centre, it is subject to an urban dynamic which must be reconciled with the preservation of its authenticity. The Château Frontenac, left, dominates the city.

Colour page opposite

Photo Vilard © AAA, Paris.

Hampi (India)

Founded at the beginning of the 14th century, the city of Vijayanagar, near the present village of Hampi on the Deccan plateau, was the capital of a vast Hindu empire which dominated southern India and kept Muslim armies from the north at bay for more than 2 centuries. The rulers ringed the city, which natural defences made almost invulnerable, with 7 fortified enclosures which also surrounded farmland. The king and his immense retinue lived in a complex of buildings in the heart of the city. The growing power of the Vijayanagar empire attracted the attention of the Muslim rulers to the north, who sacked the city in 1565. Inscribed on the World Heritage List in 1986, Hampi poses conservation problems on account of its sheer size and the number of its monuments (500). Sugar-cane or rice now grow above some of the old city streets. The integrity of other parts of the site is threatened by building development. Since Hampi is a popular centre of pilgrimage, facilities for visitors must be built to safeguard the site from wear and tear. Photo shows detail of the *gopura* (entrance gateway) to the temple of Qampapathi.

View of Djoudj National Bird Sanctuary, Senegal (see article page 5)

Photo Juan A. Fernandez © Incafo, Madrid

Centre pages

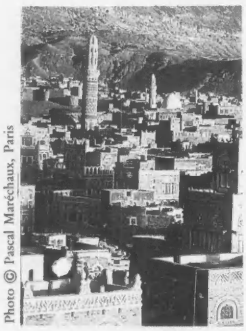


Photo © Pascal Maréchaux, Paris

The Old City of Sana'a (Yemen Arab Republic)

Situated on a plain ringed by mountains, Sana'a (page 20) was a stronghold of the Yemeni kingdom of Saba' as early as the 5th century BC and an important crossroads for caravan routes. In the 4th century AD brick walls were added to its natural defences and a remarkable urban settlement began to be organized. Conquered in the 6th century by the Persians, Sana'a embraced Islam, and began to fill with houses, mosques, gardens and public baths. All the buildings in this urban masterpiece are of beaten earth or brick and are decorated with whitewashed motifs. The conservation of the historic city raises complex questions owing to the difficulties of adapting ancient structures and to the lack of certain public amenities. The water supply is inadequate, and seepage from defective conduits, combined with the poor quality of the sewerage system, have caused the foundations of the buildings to deteriorate. The dust raised by congested motor traffic on irregularly maintained roads is also causing damage. In 1984, in order to help the Yemenites preserve the old city of Sana'a, Unesco launched an international campaign whose aims include improving the sanitary infrastructure, strengthening the foundations of the houses, resurfacing the streets, restoring the historic monuments, and renovating the sūqs. Efforts are also being made to develop tourism in Sana'a, which was inscribed on the World Heritage List in 1986.

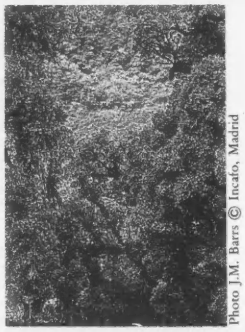
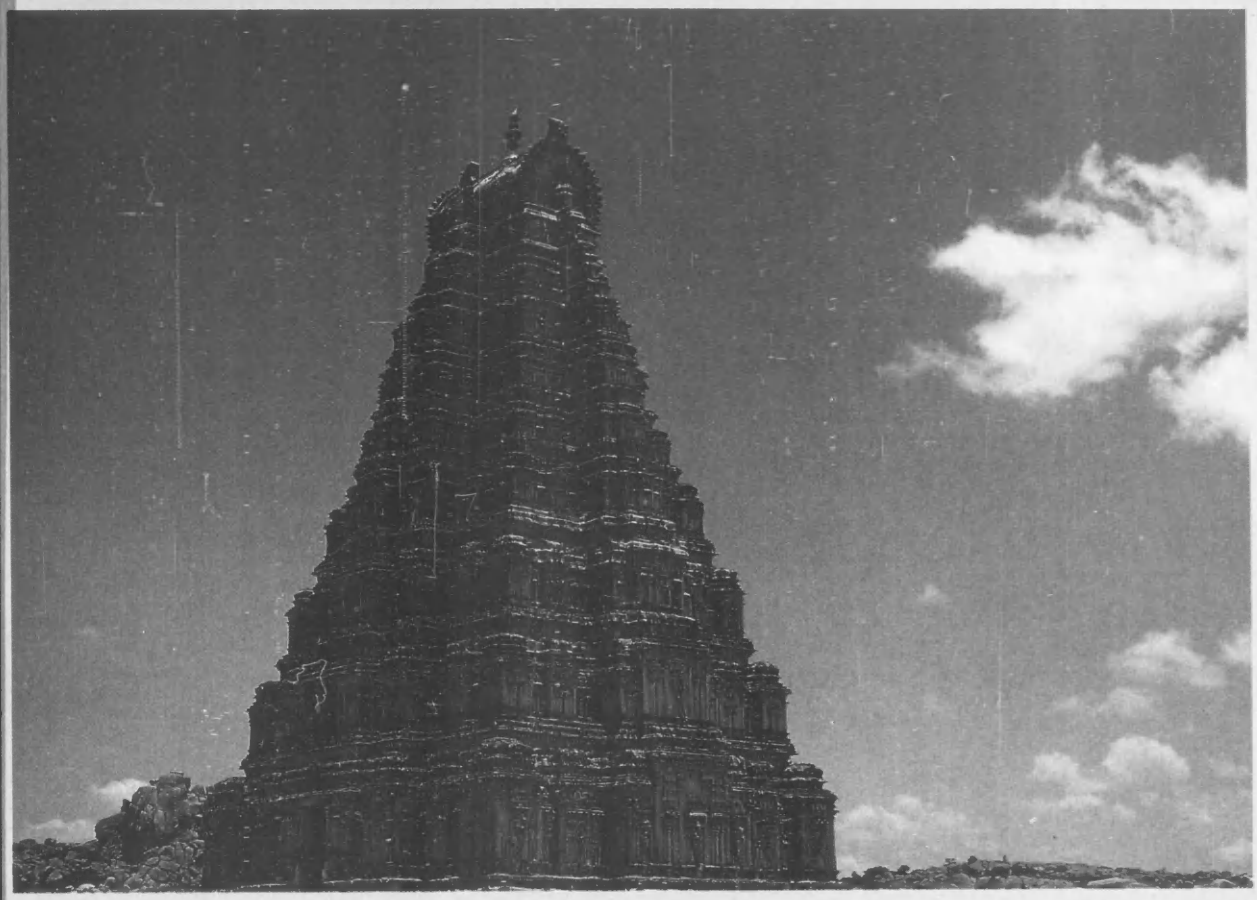
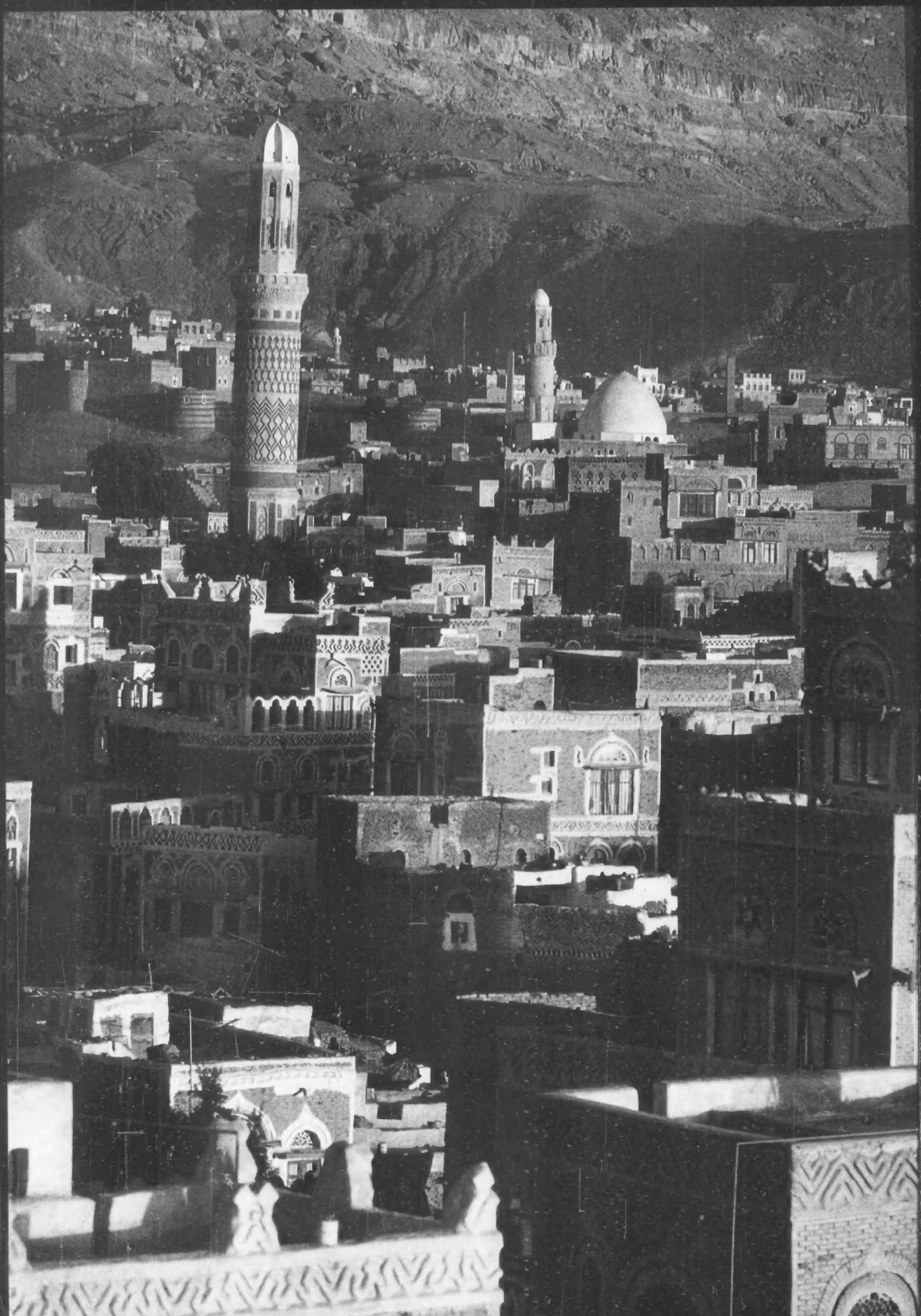


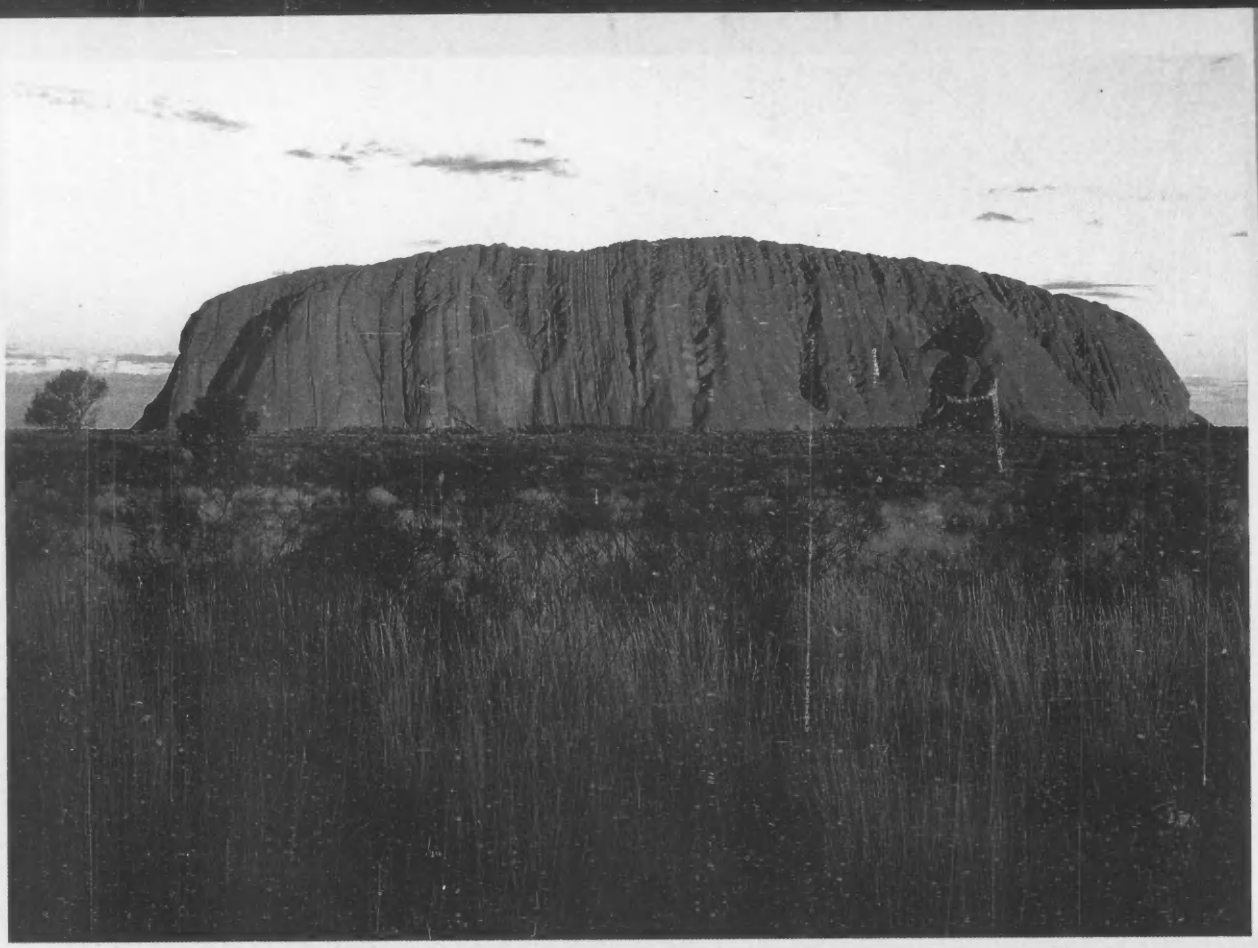
Photo J.M. Barrs © Incafo, Madrid

Talamanca Range-La Amistad (Costa Rica)

This 500,000-hectare Biosphere Reserve (page 21) is a sanctuary for the wildlife of central America. Its plant and animal life is exceptionally rich and diverse owing to the area's marked differences in climate, soils and altitude (ranging from near sea level to 3,819 m) and to its position as a "land bridge" connecting biogeographically distinct regions of North and South America. No less than 8 distinct life zones have been identified in the area. The inventory of its natural resources is not complete, but investigations have shown that 13 species of mammals, 15 of birds and 10 of reptiles and amphibians are found only within the Reserve, which was inscribed on the World Heritage List in 1983. Since access is difficult and the steep slopes and mountains are unsuitable for agriculture, there has been relatively little human settlement. Nevertheless, archaeological evidence indicates the presence of sedentary cultures dating from 500 BC. Today some 10,000 Indians live in the area, most of whom maintain a traditional lifestyle. The Talamanca Range-La Amistad Biosphere Reserve is thus serving to protect the cultural heritage of central America as well as providing invaluable knowledge about the region's natural resources.







Colour page opposite

Photo A. Larramendi © Incafo, Madrid

Photo Michel Escobar-Véronique Hemery © Incafo, Madrid

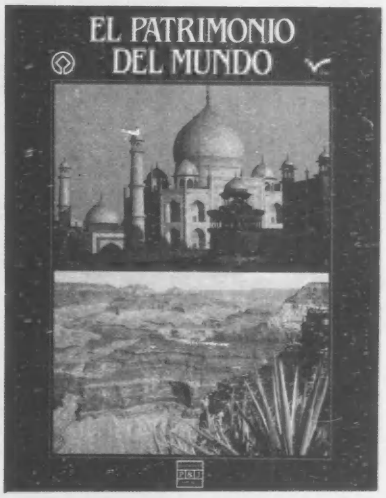
Uluru (Ayers Rock-Mount Olga) National Park (Australia)

Located in central Australia, some 300 km southwest of Alice Springs, this vast sandy plain is dominated by 2 exceptional geological formations. Ayers Rock is a huge, rounded, red sandstone monolith, 9.4 km in circumference, the smooth slopes of which rise 340 m above the plain. Caves around the base of the rock, a sacred place to Australian Aborigines, are decorated with rock paintings some of which are 10,000 years old. The 36 steep-sided rock domes of the Olgas cover 3,500 hectares and rise to 546 m above the desert. Uluru National Park is the habitat of rare or endangered plant and animal species. In addition to the coarse spinifex grass, there are over 20 species of native mammals, including several rare marsupials, which suffer from competition from introduced mammals including the red fox, cat, house mouse, European rabbit, wild dog and camel. Perhaps 80 aboriginal groups live in the Park, subsisting by hunting, gathering and controlled burning. Apart from the protection of the natural and cultural heritage, the management plan for the Park is concerned to preserve the culture of the Aborigines by reconciling the demands of their traditional way of life and the conditions of an increasingly popular tourist site. Uluru National Park was inscribed on the World Heritage List in 1987.

Delphi (Greece)

In a spectacular rocky amphitheatre on the southwestern slopes of Mount Parnassus, less than 10 km from the Gulf of Corinth, stand the ruins of the temple and oracle of Apollo, the most prestigious religious sanctuary of ancient Greece. At Delphi Apollo was worshipped and his counsel uttered through the medium of a priestess, the Pythia. The extent of the ruins shows the religious and political importance of Delphi which at its zenith in the 6th century BC was the religious centre of the Greek world. The influence of the Delphic oracle lasted until the rise of Christianity. The Sacred Way, lined with treasuries—small temples built by illustrious cities to house their offerings—winds up to the temple of Apollo (4th century BC). Above the temple are a theatre, a stadium and, near the Castalian spring, a gymnasium, all built for the Panhellenic Pythian Games. Beyond the spring is the sanctuary of Athena Pronaia, whose most famous building is the *tholos* (left), a marble rotunda dating from the early 4th century BC. A town stood on a plateau above the sanctuary. The site is endangered because it is at the heart of a seismic zone and has already been shaken by earthquakes, most recently in 1981. Some damage has been caused by climatic conditions, such as rockfalls following frost, rainwater runoff and infiltration. So many tourists visit Delphi that the site authorities have planned an obligatory itinerary around the temples to prevent wear -and- tear of the stone paving. Before inscribing the archaeological site of Delphi on the World Heritage List in 1987, the World Heritage Committee insisted that a plan to establish an aluminium processing plant nearby should be abandoned. The Greek authorities have complied by arranging for the plant to be built 55 km from Delphi.

A 10-volume series and a guidebook on the world heritage



With technical assistance from Unesco, the Spanish publishing house Incafo (Castelló, 59 Madrid), is bringing out a monumental work in 10 large-format volumes which present to an international public all the cultural and natural properties inscribed on the World Heritage List. The books, 8 of which have already been published in Spanish (entitled *El Patrimonio del Mundo*) under the imprint of Plaza & Janes, Barcelona, are fully illustrated with colour photos complemented by texts providing historical, artistic and technical information about each property. Incafo and Unesco have also compiled and co-published a single-volume guide to the world heritage, *Guía del Patrimonio Mundial* (over 500 pages extensively illustrated with colour photos).

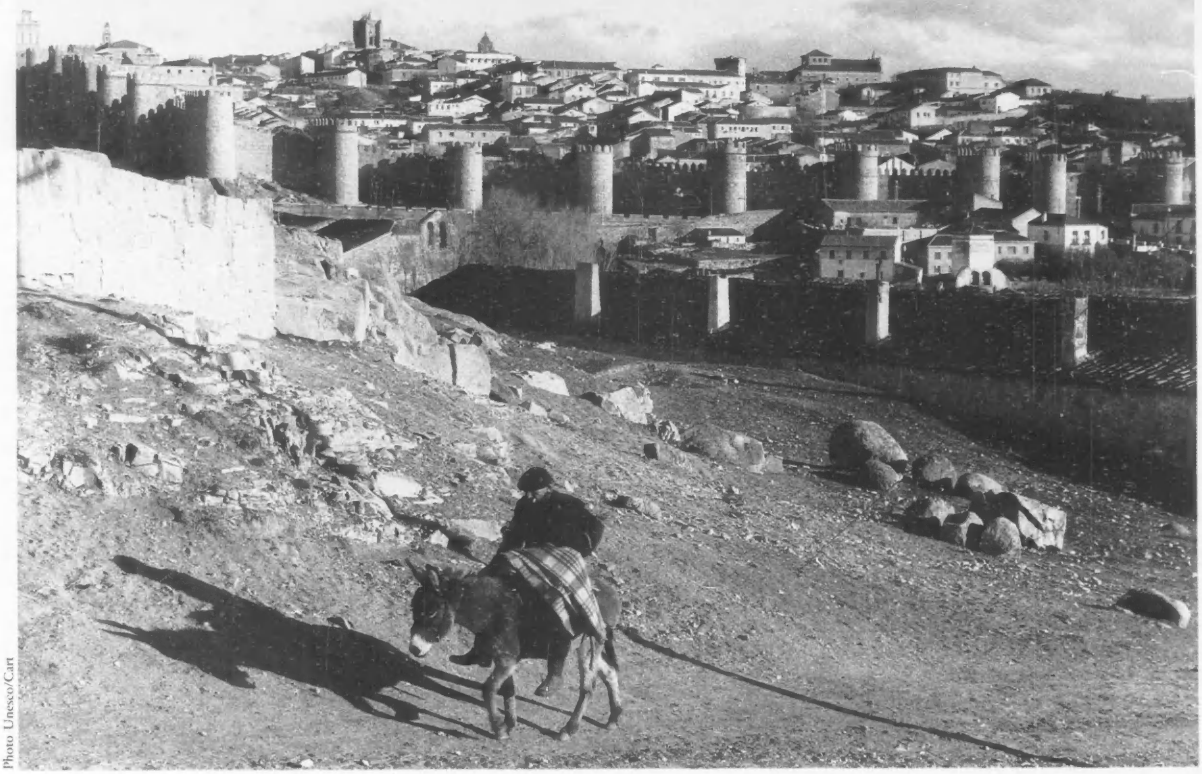


Photo Unesco/Carl

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Venice with its splendid lagoons which have miraculously isolated the city from the threats of motorized traffic.

Some rulers were of foreign origin and the architecture that they sponsored made intentional reference to other places and periods. The World Heritage List includes sites of colonial splendour such as the cities of Oaxaca in Mexico, Cuzco in Peru, Salvador de Bahia in Brazil, and even Quebec, all of which are distinctively European in style. Other urban examples have until recent years been overlooked by modern development; their buildings are sometimes described as traditional, meaning that they are identified with an unchanging social and cultural environment, even if this is more imagined than historically true. Thus the old walled cities of Shibam in Democratic Yemen, Esfahan in the Islamic Republic of Iran, or Cairo in Egypt are not merely repositories of domestic and civic monuments of undeniable qualities, they are also testaments to a past way of life that is fast disappearing. Such buildings cannot be divorced from the lives of their inhabitants, even if these lives have inevitably become transformed in the late twentieth century.

Some monuments may be appreciated from the point of view of their symbolic historical value. The Statue of Liberty was an emblem of hope for millions of migrants to the United States. Other monuments such as Auschwitz Concentration Camp in Poland serve as reminders of man's capacity to destroy himself. Yet, most cultural sites cannot represent the extreme range of human history; they belong to a changing environment in which a diversity of human needs and ideologies continue to evolve.

There are cultural sites which continue to affirm their relationship with the past; today they are the abandoned, dilapidated and perhaps recently restored relics of history or even pre-history. The traces of the cities of Memphis in Egypt, Delphi in Greece, Hatra in Iraq, and Chan Chan in Peru are dramatic artefacts of vanished civilizations. The time co-ordinates of these sites, so to speak, have been extended into the present era only by the modern activities of archaeological research and that increasing industry of human movement known as tourism. Other edifices of the past have been subjected to historical processes which have permitted them to survive into the present as still living architectural or urban environments. Such buildings or cities have been reused over many centuries; for this reason they have survived, even if in altered form.

With its superimposition of Roman, Byzantine, Baroque and contemporary structures, the centre of Rome provides a graphic cross-section of the fortunes of an empire and a capital over more than 2,000 years. Like other cities such as Anuradhapura in Sri Lanka, Jerusalem, or Santiago de Compostela in Spain, Rome was also a place of pilgrimage. Its religious monuments housed the worshippers of different cults which, like the built environment of the city, continued to evolve through time. Other urban centres which form part of the World Heritage List will develop their historical per-

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The Old Town of Avila (Spain)

Known to Castilians as "the city of saints and stone", Avila was founded by Celtic tribes and later became a Roman outpost that was captured by the Visigoths. It was converted to Christianity in the 1st century by St. Segundo, who became its first bishop, and was Muslim from the 8th to the 11th centuries. In 1090, after the expulsion of the Muslims from Castile, mighty stone ramparts began to be built around the city. This 2.5-km-long wall, with its over 80 semicircular forts and 9 imposing gates, still exists (see photo). Avila has many religious monuments, notably a Gothic cathedral (late 12th-13th centuries) whose crenellations surmounting the Romanesque choir are another reminder that the town was a defensive bastion. Among the other religious buildings are the late 12th-century Romanesque church of St. Vicente, rich in sculptures, and the convent of St. Tomás (late 15th century), which contains the tombs of Tomás de Torquemada, the grand inquisitor, and of Don Juan, the only son of the Catholic rulers Ferdinand and Isabella. The convent of the Incarnation was built on the site of the house of the Spanish nun and mystic St. Teresa of Avila (1515-1582). A native of Avila, St. Teresa reformed the Carmelite order and wrote some of the world's greatest spiritual classics. The old town of Avila, with its extra-muros churches, was inscribed on the World Heritage List in 1985.

The Historic Centre of Cracow (Poland)

The old city of Cracow stands on Wawel hill, overlooking the Vistula river. Located on a trade route between western Europe and Asia, Cracow was from the 14th to the 16th centuries the prosperous capital of the kingdom of Poland. Many historic monuments testify to its rich past and its cultural and commercial stature. The royal castle, originally Gothic, was transformed in the 16th century into a sumptuous Renaissance residence in the Italian style. In the marketplace, the largest medieval square in Europe, stands the imposing Drapers' Hall (14th-16th centuries). The Gothic cathedral (right) contains the tombs of the kings of Poland, and the church of the Virgin Mary has a masterpiece of sculpture, the great polychrome wood altarpiece created by Veit Stoss in 1477. The Jagiellonian university, founded in 1364 by Casimir the Great, was a major centre of east European intellectual life from the 14th to the 17th centuries. To combat the deterioration of this historic site as a result of pollution from exhaust fumes, traffic vibration, coal smoke, and water salinity, the Polish authorities have set out to reduce pollution sources, notably by closing down a nearby aluminium plant and replacing coal for heating by gas. They are also carrying out a comprehensive restoration programme on the old buildings. The historic centre of Cracow was inscribed on the World Heritage List in 1978.

Photo Juan A. Fernandez © Incafo, Madrid

Nesebar (Bulgaria)

Thracians, Greeks, Romans and Byzantium all left their mark on the town of Nesebar, which stands on a rocky Black Sea promontory connected to the coast by a narrow strip of land. According to legend the first settlement established on the site was founded by Mena, a Thracian from whom it took its original name, Menebria. In the 6th century BC the Greek colony of Mesembria was founded on the peninsula. Archaeologists have discovered remains of the Greek agora, the theatre and the temple of Apollo near buildings dating from the 1st century BC, when the site was occupied by the Romans. Towards the end of the 4th century AD, Mesembria became a stronghold of the Byzantine empire. In 1453 it was captured by the Turks. Among the exceptional monuments left in this "living museum" by 3,000 years of history are many fine churches, including the Old Metropolitan Church, rebuilt in the 9th century; the 10th-century church of the Virgin; the New Metropolitan Church, founded in the 11th century and continually embellished until the 18th; the church of St. John the Baptist: and a number of 13th- and 14th-century churches. The town, renamed Nesebar in 1934, was inscribed on the World Heritage List in 1983 as an exceptional cultural property bearing witness to several vanished civilizations. A long and delicate operation has begun to save the 16th-century frescoes, especially those in St. Stephen's church. Conservation of the houses is particularly necessary both to preserve the original ceramics and timberwork of their façades and to make them accessible to public. Right, the church of the Pantocrator.

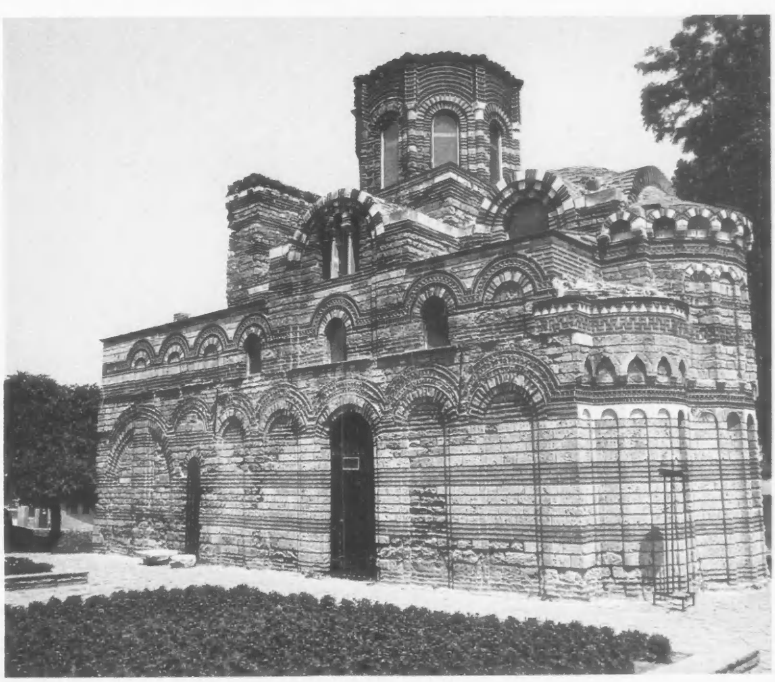

Photo L. Ruiz Pastor © Incafo, Madrid

Photos Private Collection © Incafo, Madrid

Angra do Heroísmo (Portugal)

This port on the island of Terceira in the Azores was a link between Europe and the "New World" for more than 3 centuries. As early as the 15th century it was a port-of-call for Portuguese fleets returning to Europe from the Indies. Its site, admirably chosen by the early Atlantic navigators, is sheltered by hills from the prevailing winds. The port consisted of 2 natural basins, the Beacon and the Anchorage (*Angra* in Portuguese), from the latter of which the settlement took its name. Soon after Angra was founded, the large fortresses of São Sebastiao and São Filipe (today São João Baptista) were built, providing the port with an impregnable defensive system. At the same time a town was planned according to an original urban design in which the checkerboard plan often followed when new towns are built was modified to take account of the prevailing winds. Angra do Heroísmo is thus a unique example of the adaptation of an urban model to climatic conditions. A number of baroque monuments were built in Angra after it became the seat of the Archbishop of the Azores in 1534. They include the cathedral of the Santissimo Salvador, the churches of the Misericórdia and of the Santo Espérito, and the convents of the Franciscans and the Jesuits. In 1980, the town was shaken by an earthquake which severely damaged many old buildings. In 1983, its historic centre was inscribed on the World Heritage List. Since then, Unesco has sent several expert missions to help the authorities draw up a plan to safeguard the area as part of an overall urban development programme, the major concern being to restore earthquake-damaged monuments and dwellings while respecting the architectural traditions of Terceira and preserving the town's authenticity. Left, façade of a building; below, general view of the town.

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spective only in the future; one of them is Brasília, perhaps the most formally planned of all twentieth-century capitals.

Ultimately, the cultural sites of the World Heritage List are material links between the world of the past and that of the future. They are of inestimable value for mankind because they are the physical embodiment of the passage of time. Historical processes, even if bound up with the careers of individual States, are not limited by them; these processes should be understood as a human legacy rather than a national one. The present, though by definition only a fleeting moment, is the only one over which man can exercise any control. For this reason, it is imperative that cultural sites of the World Heritage List be recognized and valued as a material record of man's historical identity. ■

GEORGE MICHELL, *of Australia, is an archaeologist who has specialized in Hindu temple architecture. He has written and edited numerous publications including (as editor)* The Islamic Heritage of Bengal *(Unesco, 1984),* Architecture of the Islamic World *and* The Penguin Guide to the Monuments of India. *He is currently co-director of an extensive documentation project at Vijayanagar in southern India.*

A sense of the sacred

BY OLEG GRABAR

The values enshrined in holy places

A large number of the cultural properties on the World Heritage List are religious monuments. They range in size from a small medieval wooden church in Norway to a sacred city in Sri Lanka; some are located in the heart of historic city centres, others in remote rural areas. Are such monuments bound by a thread of common values which transcends their diversity? Can the significance of still-used religious buildings only be fully grasped by those who worship in them? How should the temples and sacred edifices of long-dead religions be interpreted? In the following article a noted American scholar examines these and other complex issues raised by religious monuments and their conservation.

CERTAIN values attached to religious monuments are peculiar to them and to them alone. Three of these values, which may be called spiritual, aesthetic and cultural, are of particular importance, because each one affects the ways in which religious monuments can be explained and interpreted to those who wish to see or understand them.

To talk about spiritual values in relation to religious monuments is not as tautologous as it may seem. To begin with, it is not always easy to understand the functional or transcendental aspects of monuments belonging to religions which have disappeared, such as those of the ancient Near East or of classical Antiquity. In order to sense the sacred remoteness of an ancient Egyptian temple, the subtly rational proportions or the siting in nature of a Greek sanctuary, there is need for a knowledge of the ceremonies, liturgies, ideas and beliefs which made such monuments possible, but which no longer play a role in human life today.

Nor are spiritual values interchangeable. To interpret a Muslim holy place in terms of Buddhist spirituality is obviously intellectually improper and ethically wrong. Very different spiritual approaches are, for example, required to understand such different sites as Delphi and the Jesuit missions in South America.

What is at issue here could be called the spiritual integrity of a religious monument, and its expression through the information provided about it. The need for such information is obvious in the case of monuments of abandoned religions, but it is even more acute in the case of living religions, especially when the monument is also a living one. How should Christian or Muslim spirituality be presented in buildings which have become museums, like Hagia Sophia in Istanbul, which was built as an imperial church and then turned into a mosque of considerable ideological significance? How should the spiritual values of Chartres be presented without trivializing religious practice into a kind of show? Or should we say that religious buildings are spiritually restricted to those who belong to the faith concerned? These questions raise fundamental issues about the ethics of spiritual property which, to my knowledge, have not been discussed.

We seem to be on safer ground when we turn to aesthetic values, since agreement can easily be reached about the visual qualities of a monument. To an overwhelming degree, the artistic heritage of mankind has been inspired by the piety and beliefs held by men and women since time immemorial. At various times great artists have been asked or have volunteered to build, decorate, or otherwise create religious monuments. And there is a degree of consensus about the definitions of aesthetic quality, at least for times somewhat removed from our own. In part, these definitions derive from the constantly evolving taste and judgment of living societies, but aesthetic definitions are not only the fickle judgments of various periods. Much in them comes directly from knowledge and understanding of the time and place in which the monument was created. It is always assumed that those who created the monument invested in the best available competence to produce something whose high quality would be recognized by the people of that time, if not by posterity.

Difficulties begin to appear when one seeks to understand similarities and differences between masterpieces of religious art. For instance, nearly all religions have raised at one time or another the question of whether art and belief can coexist. Answers have varied, and Christianity or Buddhism have provided at different times contradictory responses to an issue which is central to any religion with a transcendental divine, while Islam or Judaism have remained, on the whole, set on a single and more or less consistent course.

Such variations have obviously created very different emphases and approaches to visual creativity. Nearly all religions have both congregational requirements and ways of expressing private piety. These have led to very different solutions, the huge congregational mosques of Islam at one extreme;

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Photo J.M. Reyero © Incafo, Madrid

Mosque City of Bagerhat (Bangladesh)

This city, originally known as Khalifatabad, was founded in the 15th century by General Ulugh Khan Jahan in the southern part of the world's biggest delta, near the coastline of the Bay of Bengal. A devout man, the general constructed brick mosques, palaces, public buildings, bridges and mausoleums, as well as paved roads communicating with other cities. Large reservoirs of fresh water, indispensable in this region of brackish water, catered for the needs of the population. Architecturally, the spectacular ruins of Bagerhat are a unique blend of the imperial style of Delhi and the local style of Muslim Bengal. The mosques are sober and austere. A typical example is the Shait Gumbad mosque (right), which is renowned for its 77 domes and its immense prayer hall divided into 7 naves. The site, inscribed on the World Heritage List in 1985, is threatened by the monsoon, encroaching vegetation, and the extreme salinity of the soil and the atmosphere which is corroding the monuments and weakening their foundations. In 1985 Unesco launched a campaign to safeguard Bagerhat and Paharpur, another World Heritage site in Bangladesh. The first priorities are to reinforce the weakest sections of the buildings, to set up a drainage system to stop rainwater from seeping into them, and to combat vandalism.

The Convent of St. Gall (Switzerland)

In the valley of the Steinach river, where the Irish monk Gallus had his hermit's retreat in the 7th century, abbot Otmar established a Benedictine community in 747 and founded a monastery and a school. In the 9th and 10th centuries, St. Gall became one of the most important centres of culture in the West. Its schools of chant and illumination, and above all its scriptorium or copying room in which scribes produced illuminated manuscripts of outstanding beauty, were famed throughout Western Christendom. The abbey was at the height of its glory in the 9th century under abbot Gozbert, when it was rebuilt according to a new design which was a remarkable illustration of Carolingian architectural ideas. Today the only surviving vestiges of the splendour of the Carolingian monastery are the foundations and a number of architectural elements discovered during probes made in the 1960s. Rebuilt between the 16th and the 18th centuries, the monastery incorporates a fine baroque cathedral (above) and library. A major landmark in the history of Western intellectual and religious life, the Convent of St. Gall was inscribed on the World Heritage List in 1983.

Jesuit Missions of the Guaranis (Argentina, Brazil)

As part of their efforts to convert the Guarani Indians to Christianity, Spanish Jesuit missionaries in 17th- and 18th-century Latin America created villages known as *reducciones* in which the Indians could be concentrated and given a religious education. Five of these Jesuit Missions, São Miguel das Missões in Brazil, and San Ignacio Mini, Santa Ana, Nuestra Señora de Loreto and Santa María la Mayor in Argentina, were jointly inscribed on the World Heritage List in 1983 and 1984. They were all built in accordance with the same baroque masterplan, with church, Jesuit fathers' residence, school, Indians' houses and cemetery all grouped around a large square. For several years Argentina and Brazil have been engaged on study and restoration work in some of the Missions. In Argentina, exploration, site-mapping and clearing have been carried out at Santa Ana; tourist facilities have been improved at San Ignacio Mini, which is better preserved than the other Missions; and undergrowth has been cleared at Nuestra Señora de Loreto. In Brazil, consolidation, site-mapping and cleaning are under way at São Miguel. Unesco will soon be launching a major international campaign to safeguard the Jesuit Missions. Consultants are already advising on steps to consolidate the buildings. Unesco has also, among other measures, financed meetings to plan future action programmes, carried out site inventories, published a booklet on *The Jesuit Missions of the Guaranis* and co-produced a documentary film. Right, church of São Miguel das Missões (Brazil), and detail of façade, San Ignacio Mini (Argentina).

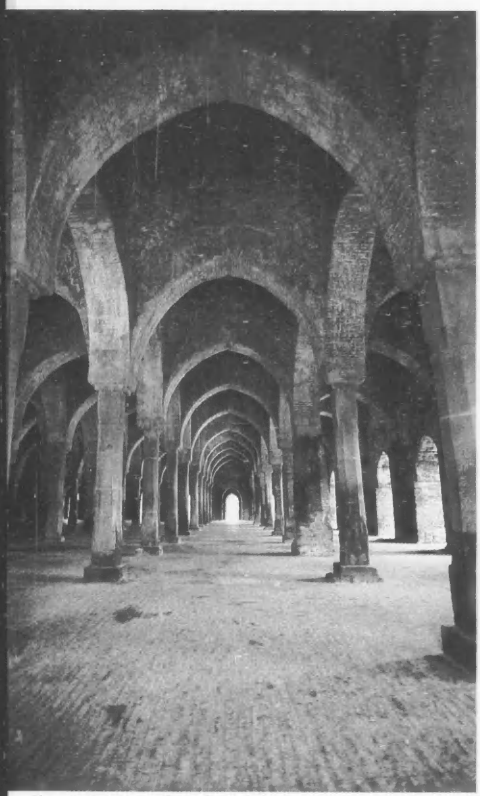

Photo L. Ruiz Pastor © Incafo, Madrid

Photo Unesco/J. Hartley

Photo Unesco

Photo F.F. Ortiz/Unesco

Photo © Cap-Vieillet, Paris

◀The Cistercian Abbey of Fontenay (France)

Situated in northern Burgundy, Fontenay was founded in 1119 by Bernard of Clairvaux, one of the most forceful personalities of his time. As a young man, St. Bernard entered the Cistercian order, newly founded by a reformer who wished to restore rigour and austerity to Western monasticism. Painting, ornate sculpture and all forms of embellishment liable to cause distraction were prohibited from the walls of Cistercian monasteries, and consequently the Cistercian edifices of Europe are admired by those who look for clarity, logic and plainness in architecture. The church at Fontenay was built between 1139 and 1147. Its transept is towerless. Apart from the cloisters (left) and the chapter house, which were built at the same time as the church, the warming room, the refectory, and the long, magnificently vaulted parlour have also survived, along with the dormitory, whose timberwork was restored in the 15th century and has not needed repairs since then. The forge (c. 1180) is one of the oldest industrial buildings in Europe. Abandoned in the 18th century, then sold, the abbey had not been too seriously damaged by its owners when all activity came to an end there in 1902. Four years later, a new owner embarked on the restoration of the abbey. He successfully achieved his goal and today the onerous task of upkeep is being scrupulously carried out by his heirs with the aid of the French State. The abbey was inscribed on the World Heritage List in 1981.

Photo L. Ruiz Pastor © Incafo, Madrid

◀The Great Mosque and Hospital of Divrigi (Turkey)

This highly original architectural ensemble in the mountainous region of eastern Anatolia was founded in 1228-1229 by emir Ahmet Shah of the Turkish Mengucekid dynasty. Both the mosque and the adjoining *marestan* (a hospital for the insane) were built by the same architect, Khurramshad of Ahlat. The single prayer room in the great mosque has 5 naves and stone vaulting which displays astonishing technical skill and mastery of space. Above the prayer room are 2 cupolas of unequal size, one above the ablutions basin, and the main cupola which rises above the *mihrab* (the decorated niche indicating the direction of Mecca) and is itself surmounted by the mosque's most accomplished piece of architecture, a ribbed hexagonal spire supported on pendentives. The walls of Divrigi are pierced by 3 monumental gates (left) sumptuously decorated with floral and geometric motifs recalling contemporary Armenian or Georgian designs. The mosque and hospital were inscribed on the World Heritage List in 1985.

Photo B. Strugar © Incafo, Madrid

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Studenica Monastery (Yugoslavia)

Founded in 1183 by the Serbian prince Stefan Nemanja and developed by his sons, the monastery of Studenica became the necropolis of the Nemanjic dynasty and remained a focal point of Serbian history for centuries. Within the walls of the monastery more sanctuaries were built in addition to the original church, and decorated by medieval Christian artists with beautiful marble sculptures and graceful frescoes such as that of the *Birth of the Virgin* (above) from the famous "King's Church" of St. Anne and St. Joachim, completed in 1314. The wall paintings (1208-1209) in the Church of the Virgin display new ways of depicting human expression and space and are a landmark in the history of Byzantine and Western art. The works of the late 13th-century Italian painters Cimabue, Duccio and Giotto spring from this new awareness. The monastery, inscribed on the World Heritage List in 1986, is well-conserved. However, the authorities are concerned by plans to construct a dam in the vicinity and divert the Studenica River. In autumn 1988 Unesco experts will visit the site to study the likely effects of this project.

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individual and private icons, reliquaries, or altars at the other.

Other examples can easily be provided of different, even antagonistic, purposes and assumptions underlying aesthetic creativity. Should one, for instance, tend to emphasize the similarities, the constants, of spaces created for large numbers or of the need for official or esoteric signs and symbols? Or should one, on the contrary, argue that since aesthetic enjoyment is a personal matter, its expression can only be defined around individual monuments and not on a universal level? Are there a religious art and aesthetic of faith and piety? Or are there only large numbers of religious monuments, each of which provides one or more aesthetic solutions to discrete and specific needs?

These brief considerations of spiritual and aesthetic values lead automatically to my third category, that of cultural values. What I mean by this are such features as enhance and strengthen the awareness an individual or a group has of the past, both in an ethnic or biological sense and in a geographical or regional sense.

It is assumed that a knowledge of one's roots is an asset in the definition of one's identity, and certainly religious beliefs expressed through writing, through traditions, and through monuments are part of every person's heritage. But, in addition, the vagaries of history have given to many ethnic or national groups the guardianship of the monuments of other pasts and other religions than their own. The issue here is how to interpret other religions within one's own consciousness and within one's own heritage, or else how to have access to one's religious monuments located in other and at times inimical lands.

This is a relatively recent issue, for in the past new religions or new States did not hesitate either to destroy the remains of older faiths or to adapt them to their own purposes. The ancient Egyptian temple at Luxor was in the past transformed into a church, as was the Pantheon in Rome, and Hagia Sophia became a mosque, while the first mosque at Delhi was built on top of a Hindu temple whose destroyed elements were reused in the mosque. In many ways the truth of any one religion implies the falsehood of other faiths, and the tragic human consequences of this state of affairs throughout the ages are well known.

It is probably best to assume that, in our time of complex relationships both to the past and to land, each person will maintain some sort of equilibrium between his or her own religious culture, the religious cultures of the land in which he or she lives, and a universal acceptance of diversity. Only then will it be possible to see religious monuments as national heirlooms, as the property at one level of all men and women and at another as expressions of piety for restricted groups only.

A common thread binds spiritual, aesthetic and cultural values when they are applied to religious monuments. It is the thread of integrity. There is the integrity of the monument, which conservators, curators and academics of all sorts are ready to preserve, but must above all try to explain at different levels, from the highest and most esoteric scholarship to the very important level of primary education. There is also the integrity of the pious believer, who must not feel that fame and recognition may have robbed *his* or *her* shrine of some particle of grace but who realizes that this holy place can also be a work of art. Finally there is the integrity of the citizen of a country who feels pride in its monuments. Through the magic of artistic creativity, it is possible to partake of the power of a religious monument, without sharing in its holiness or even liking its aesthetic values.

The questions raised in this essay can only be answered if we are ready to furnish the considerable educational effort which would make religious monuments accessible and meaningful to all. Such an education must go further than the mere provision of information. It requires a protean sensitivity which combines humility towards all beliefs, pride in the age-old accomplishments of artists and artisans, and emotional or aesthetic satisfaction in their works. ■

OLEG GRABAR, *of the United States, is a distinguished art historian who has been since 1980 Aga Khan Professor of Islamic Art and Architecture at Harvard University, where he was Chairman of the Department of Fine Arts between 1977 and 1982. He was a member of the Steering Committee of the Aga Khan Award for Architecture between 1978 and 1987. He has been a member of the American Academy of Arts and Sciences since 1978 and was recently elected to the British Academy. He is the author of numerous articles and books on Islamic art and architecture including, most recently,* Islamic Art Until 1250, *Pelican, London, 1987 (written in collaboration with the late R. Ettinghausen).*

The world heritage concept

BY MICHEL PARENT

THE establishment of the World Heritage List is not an academic exercise. It is an international undertaking of a juridical, technical and practical nature designed to mobilize active solidarity for the safeguard of the cultural and natural heritage.

This heritage is under constant threat from the effects of underdevelopment or ill-advised development. International co-operation is required to ensure the survival of vestiges of vanished cultures and of the riches of living cultures, to save living species from extinction, to make possible the sustained renewal of natural resources and to maintain the ecological balance. The implementation of the 1972 Convention is in the forefront of this effort.

Making an inventory of properties of universal value is an exciting intellectual enterprise, but one which calls for a more restrictive definition of the notion of heritage, which is tending to become all-inclusive under the impact of scientific development and the expansion of the concepts of history and culture. It is true that everything belongs to history and that the whole of nature and all human artefacts leave traces worthy of interpretation. But the world is changing rapidly and if the truly essential traces of the heritage are not given special universal recognition, then even they may be swept away by the forces of change. If this happens, the notion of permanent value and its expression in specific sites and artefacts may be lost.

The properties chosen for inclusion on the World Heritage List are not the only ones that deserve to be safeguarded, however. On the contrary, properties privileged by inclusion are intended to serve as examples and to encourage the formulation of national or local policies for safeguarding the environment as a whole. The objectives of the Convention are thus both ambitious and credible. It affords to every State Party prestige, specific assistance and safeguards in the event of catastrophes against which no country can be forewarned, not even the most developed and the best equipped.

All countries possess an appreciable cultural and natural heritage. Many of the 102 States Parties to the Convention have submitted dossiers to the World Heritage Committee and obtained the inscription on the List of numerous properties. But, it might be asked, why have they not all done so? It is not very logical for a State to ratify the Convention (unless it attaches only a symbolic value to ratification), and then to take no further action. And why are there only 102 States Parties to the Convention? Why has the 1972 Convention not won unanimous, universal support? Joint efforts by the States Parties, Unesco, and the International Council on Monuments and Sites (ICOMOS) to define fields of international co-operation (by areas of common culture, beliefs and architectural techniques, or by major communication and trade routes) are thwarted by the blank spaces which appear on the maps, like the gaps which indicated *terra incognita* in early atlases.

Admittedly there are also great disparities between States deriving from their size, population density, the age of their culture, the vicissitudes of their history or the care they have hitherto taken to conserve their cultural heritage. Likewise, the fact that cultural properties far outnumber natural properties on the List is not in itself significant. A cultural property may be a small or isolated building or even an archaeological vestige in the midst of a wilderness; a natural property may be an immense national park bigger than some States.

As the field of application of the Convention is gradually defined, it is becoming clear that the means needed to accomplish its aims are far beyond the resources of the World Heritage Committee, which can only finance urgent work, expert studies, underfunded projects carried out over a long period, and the preventive work necessary to avoid the deterioration of properties and the costs that ensue, and to guarantee their authenticity.

The publication of information about the World Heritage in the media should help to encourage major safeguarding operations, but the rigour with which the List is established and the need to make it representative and fully credible will determine the success of media coverage. Finally, solidarity in aid of World Heritage properties calls for permanent monitoring of their condition, in order to guarantee that the Convention is respected and that financial aid is put to good use. There should be no question of

Tassili n'Ajjer (Algeria)

This vast plateau (*tassili* in the Berber language) covers 72,000 km² of the central Sahara in south-eastern Algeria. It is a kind of natural fortress, penetrated only by a few deep gorges. In the West, the plateau (on average 1,500 m high) ends in a sheer, 500-m cliff, almost 700 km long. A network of canyons cuts through the interior, some of them with pools, springs or even permanent streams fringed with vegetation. Sedentary groups of Tuareg peoples have long been settled in these oases, and nomadic Tuareg roam elsewhere on the plateau, although they too are tending to settle down as a result of drought and declining plant resources, thus further threatening the delicate ecological balance. Tassili n'Ajjer is famous for the thousands of rock paintings and engravings which make it the world's biggest open-air prehistoric museum. This Neolithic (6000-2000 BC) rock art and many other archaeological remains indicate that the region was occupied during a less arid period, when flora and fauna were much more abundant. The site was inscribed on the World Heritage List in 1982 in recognition of its cultural riches as well as its natural value. A management plan is being worked out with Unesco assistance under the terms of the Convention. Right, engraving of oxen at Tegarghart, near Djanet. Below right, polygonaceous shrub at Essendilène.

Photo © Drillaud-A.P.L. Prades

inscribing unworthy properties on the List. Fortunately this is not the case. But the extension and success of the World Heritage concept call for vigilance. The exercise of supra-national control should not be seen as an infringement of the sovereignty of States, since they have made their commitment freely after weighing up the advantages and constraints.

Any community can find in the Convention support for the safeguard of its cultural identity which goes beyond material aid and may help to prevent the clandestine destruction of its heritage or to combat interests which have scant respect for it. ■

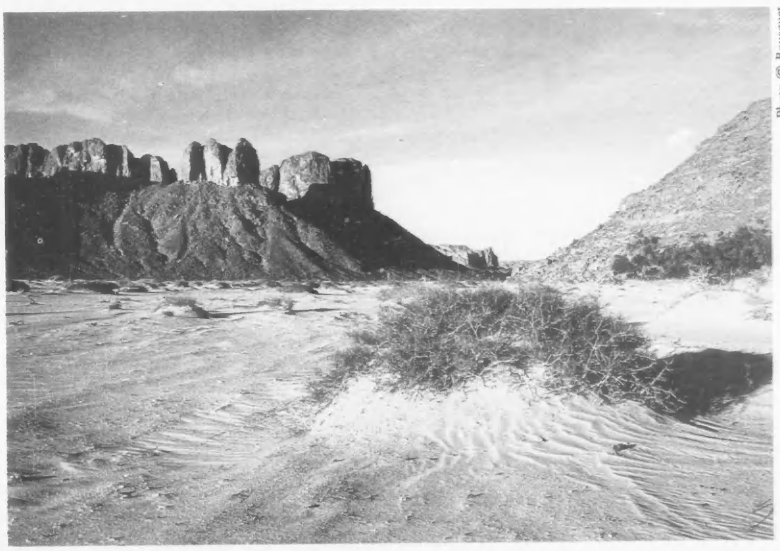

Photo © Bousquet

MICHEL PARENT, *of France, was President of the International Council on Monuments and Sites from 1981 to 1987. As a member of the committee which drafted the World Heritage Convention and as rapporteur and later chairman of the World Heritage Committee, he made a leading contribution to the birth and development of the world heritage concept.*

An idea in action

The World Heritage Convention and how it works

Who participates in the World Heritage mechanism?

Depending on their national procedures, States may ratify, accept or accede to the "Convention Concerning the Protection of the World Cultural and Natural Heritage".[1] These countries (called "States Parties") thus become full participants in the Convention's mechanisms. Adopted by Unesco's General Conference in November 1972, the Convention entered into force in 1975, once a "critical mass" of States Parties, set at twenty, had joined. The United States of America was the first to do so, on 7 December 1973. It was followed in rapid succession by nineteen others from all latitudes (Egypt, Iraq, Bulgaria, Sudan, Algeria, Australia, Zaire, Nigeria, Niger, Islamic Republic of Iran, Tunisia, Jordan, Yugoslavia, Ecuador, France, Ghana, Syrian Arab Republic, Cyprus, and Switzerland).

As of 1 June 1988 there were 102 States Parties from all the world's regions. Of Unesco's total membership, only fifty-six States are yet to become Parties to the Convention, making it not only Unesco's most broadly accepted international instrument but also the world's most ratified agreement on conservation. So, just as its framers intended, the day is not far off when the Convention will extend its protection to "the world heritage of mankind as a whole".

The States Parties meet in General Assembly once every two years to elect twenty-one of their number to the World Heritage Committee. Each State's term of office is six years, but one-third of the membership changes every two years. The first Committee was elected in November 1976. It held its first session in June 1977, at which principles and methods of work were agreed. By the following year, with the inscription of the first twelve sites, the Convention became operational.

The Committee's current members are Algeria, Australia, Brazil, Bulgaria, Canada, Cuba, France, Greece, India, Italy, Lebanon, Malawi, Mexico, Norway, Pakistan, Sri Lanka, Tunisia, Turkey, United Republic of Tanzania, United States of America and Yemen Arab Republic.

Unesco officers responsible for the heritage preservation programmes provide the secretariat of the Committee and implement its decisions. The Committee is advised, particularly in the selection of properties for the World Heritage List, by specialists in the non-governmental organizations active internationally in safeguarding the cultural and natural heritage—the International Council on Monuments and Sites (ICOMOS) and the International Union for Conservation of Nature and Natural Resources (IUCN). The two organizations also contribute technically to the safeguard of World Heritage sites, together with the International Centre for the Study of the Preservation and the Restoration of Cultural Property in Rome (ICCROM), founded under the aegis of Unesco.

How are World Heritage properties chosen?

States Parties begin the process by *nominating* properties in their territory that the Committee may consider to be of "outstanding universal value", hence deserving inscription on the World Heritage List. The Committee then *inscribes* on the List those properties that meet criteria which focus the easily understandable but broad, and necessarily subjective, concept of "outstanding universal value". These criteria have been carefully worked out over the years. The process has involved long hours of study, comparison and discussion among natural scientists and historians of art and architecture as well as within the Committee itself. But even today uncertainties remain and certain inscriptions can be agreed upon by all only after animated discussion.

1. The Convention applies to *immovable* property. Thus it defines cultural heritage as "monuments, groups of buildings and sites;" natural heritage as "natural features (e.g. physical and biological formations), geological and physiographical formations and natural sites".

St. Mary's Cathedral and St. Michael's Church, Hildesheim (Fed. Rep. of Germany)

The layout and interior decoration of these 2 monuments throw light on an important period in the history of religious art of the Holy Roman Empire during the Romanesque era. Founded in the 9th century and rebuilt in the 11th, St. Mary's Cathedral (right) is embellished with major works of art, notably its bronze doors depicting scenes from the book of Genesis and the life of Christ, and a bronze column, inspired by Trajan's Column in Rome, whose spiral decoration depicts scenes from the New Testament. Both works were commissioned by bishop Bernward (933-1022), who was the leading counsellor of emperor Otto III and a passionate art lover. St. Bernward was also the founder of the ancient Benedictine abbey church of St. Michael (mainly 11th-12th centuries). St. Michael's is the masterpiece of Ottonian Germanic architecture, with its symmetrical layout, its treatment of volumes, and its original silhouette in which 4 elegant circular turrets contrast with the 2 massive lantern towers. In the crypt is St. Bernward's tomb. The painted wood ceiling of the nave depicts a gigantic Tree of Jesse and Christological scenes. These 2 buildings were inscribed on the World Heritage List in 1985.

Garamba National Park (Zaire)

Among the great mammals which roam the vast expanse of the Garamba savannah in north-eastern Zaire is one of Africa's rarest and most threatened species, the northern white rhinoceros *(Ceratotherium simum cottoni)*. Larger than the black rhino, it owes its name to its rectangular jaw, the word "white" being a corruption of the Afrikaans word *wyd* (wide, or large). The white rhino is actually dark grey, when it is not covered in the red lateritic mud in which it wallows. Garamba National Park, founded in 1938 to save the white rhino, was inscribed on the World Heritage List in 1980. Thanks to a project organized within the framework of the World Heritage Convention and jointly funded by the World Wildlife Fund (WWF), Frankfurt Zoo (Fed. Rep. of Germany), Zaire Institute for the Conservation of Nature and Unesco, the white rhino population, which in 1985 had fallen to a critical threshold of a dozen, is now around twenty. The main purpose of the project, which will continue for several years until the rhino's numbers have increased sufficiently to ensure its survival, is to combat poaching. Hippopotamus, elephant, buffalo, giraffe and leopard also live in the 4,480 km² Park. A balance between woodland and grassland is maintained by a policy of preventive burning which lets the new grass grow for pasture.

Photo A. Pradas © Incafo, Madrid

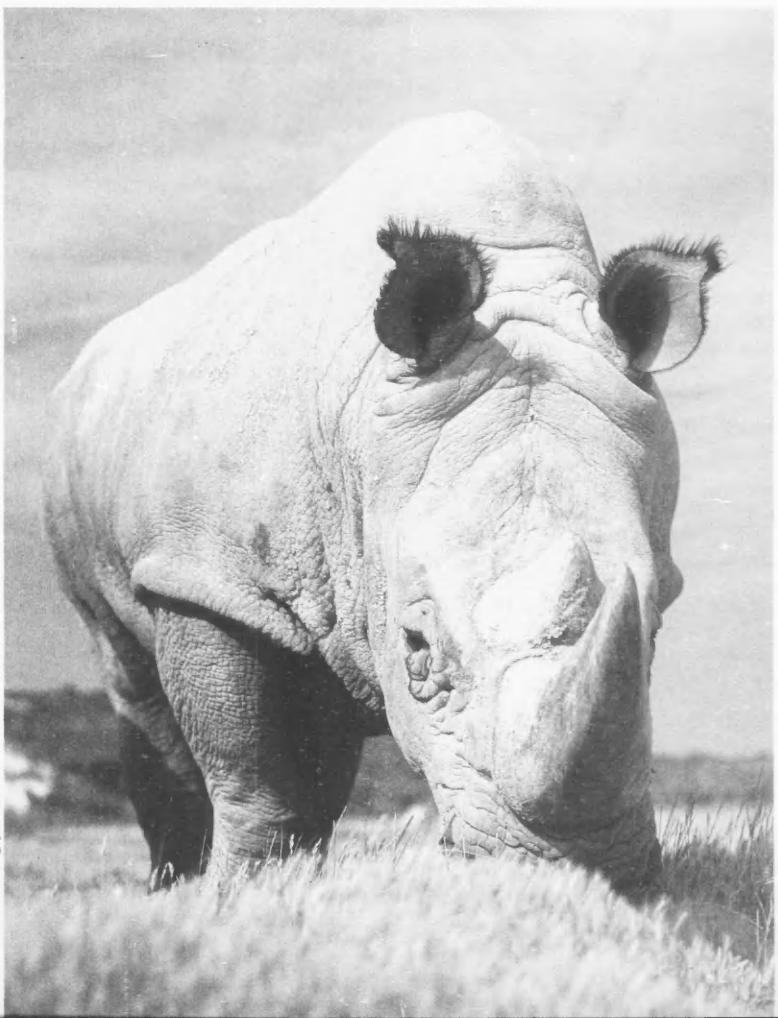

Photo Labat © Jacana, Paris

The Committee meets every autumn to inscribe properties nominated and is aided in its evaluation by ICOMOS and IUCN, who use their international networks of specialists to assess each site against the criteria. Since 1978 therefore there has been an annual cycle of nomination, evaluation and inscription. The List's rate of growth has been striking, with an average of thirty new properties added each year since 1978. The List has grown much more rapidly in cultural properties: out of 288 so far inscribed 211 are cultural, 68 natural and nine so-called "mixed" properties such as Tikal National Park in Guatemala and Mount Taishan in China, sites that combine great natural and cultural significance. One hundred and thirty-three of these properties are found in Europe and North America, 36 in Latin America and the Caribbean, 48 in Asia and the Pacific, 32 in Africa and 39 in the Arab States.

Today's List is clearly not yet universally representative. Nor does it include certain properties whose worldwide importance would be recognized immediately by the man in the street, not to speak of the art historian or natural scientist. This is simply because a third of the world community has not yet joined the Convention. And the order in which the List has been established reflects the priorities of States Parties themselves.

What is the practical benefit of inscription on the List?

Since better *protection* of World Heritage properties is the Convention's essential purpose, the immediate and obvious benefit of international listing is to strengthen the

Mogao Caves (China)

This ensemble of Buddhist cave-temples is located on the edge of the Taklamakan desert, Gansu Province, in north-west China. Monks first began work on the caves in the 4th century AD at a place where, according to legend, a monk had a vision of a thousand Buddhas. The site, which was on the Silk Road, saw intensive activity until the 14th century, by which time hundreds of caves had been hewn out of the rock and decorated with frescoes (detail, right) and sculptures by artists from diverse traditions. Today 496 caves still exist. After a period (4th to 6th centuries) marked by the influence of Graeco-Buddhist art and the predominance of illustrations of *jātakas*, stories relating former lives of the Buddha, Mogao art reached its zenith between the 6th and the 9th centuries with the evocation of Buddhist scriptures or *sūtras*, scenes from daily life and historical subjects. From the 10th to the 14th centuries, with the decline of the Silk Road and the recruitment of artist-functionaries to decorate the caves, a more academic style evolved. Mogao was inscribed on the World Heritage List in 1987. In 1988, Unesco sent a team of experts to help the Chinese authorities set up a conservation plan for the site, which is in an earthquake zone prone to sandstorms. Despite the arid desert climate, the morning mist in spring and summer can trigger a chemical reaction which alters the colours of the frescoes. Training courses in the conservation of wall paintings are planned for staff working at Mogao.

hand of those who are committed to their protection and enjoyment. These may be the conservation personnel of national antiquities or parks services, who must compete with other government departments for limited funds. They may be local authorities or even private associations of concerned citizens.

But international notoriety and moral support are not enough. Thus the World Heritage Fund created by the Convention makes it possible to provide concrete financial and technical support to countries with limited resources. All States Parties have to contribute to this Fund: either 1 per cent of their share of Unesco's Regular Budget as a compulsory contribution, or a voluntary contribution that should at least equal that 1 per cent. The Convention also provides for contributions from non-governmental bodies and private individuals.

The World Heritage Committee allocates the annual budget of the Fund—2.7 million U.S. dollars in 1988—to a wide range of activities. These include the identification of potential World Heritage properties, the study of their state of conservation and of the conservation measures they require ($100,000 allocated in 1988); the provision of expert advice, technical support and equipment for conservation (some $700,000 allocated); the strengthening of training in conservation ($500,000) and finally, emergency assistance when properties have been suddenly damaged by a disaster or threatened by one ($200,000).

Furthermore, the Committee may also choose to place a severely threatened site on the "List of World Heritage in Danger". Such listing provides the opportunity to take urgent steps and raise funds for the large-scale operations needed to avert the danger. To date seven natural and cultural sites have been so listed.

In all cases, the framers of the Convention clearly stipulated that the national authorities, who are the direct depositary of the heritage in question, should match the commitment of the international community. With honour comes responsibility and, in the ultimate analysis, accountability. By the same token, the Committee has not rested content with simply inscribing more and more properties year after year. It has set up a system of monitoring the state of conservation of listed sites and of intervening appropriately when local resources prove to be insufficient.

Since 1978, a total of some 5 million dollars has been disbursed by the Fund, a paltry sum in relation to enormous needs the world over—and a pittance when compared to the vast amounts nations spend on weapons of destruction. Yet the money has gone a long way, for it has been used to supplement national investments, to catalyze local resources and, perhaps most important of all, to stimulate support at various levels, both national and international, for the conservation of a common heritage.

In Haiti, for example, a comprehensive 4-million-dollar conservation and training programme has been developed for the historic Citadel, Sans Souci Palace and Ramiers site. The Fund has contributed $ 100,000, Unesco's Regular Budget the same amount, and the United Nations Development Programme (UNDP) some $ 1.2 million. Bilateral reinforcement of the government's investment comes from Austria, Canada, Chile, France, the Federal Republic of Germany and the Netherlands. The World Monuments Fund has also raised almost $ 200,000 from American philanthropic sources. Similarly, support from the World Heritage Fund has led to a vast movement of solidarity in favour of Zaire's splendid Garamba National Park, the last refuge of the northern white rhino. ■

Photo © Rinnie Tang, Paris

The World Heritage List

288 properties as at 31 December 1987

(211 cultural sites, 68 natural sites and 9 mixed sites)

Algeria
Al Qal'a of Beni Hammad. Tassili n'Ajjer. M'Zab Valley. Djemila. Tipasa. Timgad.

Argentina
Los Glaciares. Iguazu National Park.

Argentina and Brazil
Jesuit Missions of the Guaranis: San Ignacio Mini, Santa Ana, Nuestra Señora de Loreto and Santa María la Mayor (Argentina); ruins of São Miguel das Missões (Brazil).

Australia
Kakadu National Park. Great Barrier Reef. Willandra Lakes Region. Western Tasmania Wilderness National Parks. Lord Howe Island group. Australian East Coast Temperate and Sub-Tropical Rainforest Parks. Uluru National Park.

Bangladesh
Historic mosque city of Bagerhat. Ruins of the Buddhist Vihara, Paharpur.

Benin
Royal Palaces of Abomey.

Bolivia
City of Potosí.

Brazil
Historic town of Ouro Preto. Historic centre of the town of Olinda. Historic centre of Salvador de Bahia. Sanctuary of Bom Jesus do Congonhas. Iguazu National Park. Brasília.

Bulgaria
Boyana Church. Madara Rider. Thracian tomb of Kazanlak. Rock-hewn churches of Ivanovo. Ancient city of Nesebar. Rila Monastery. Srebarna Nature Reserve. Pirin National Park. Thracian tomb of Sveshtari.

Cameroon
Dja Faunal Reserve.

Canada
L'Anse aux Meadows National Historic Park. Nahanni National Park. Dinosaur Provincial Park. Anthony Island. Head-Smashed-In Bison Jump Complex. Wood Buffalo National Park. Canadian Rocky Mountain Parks.* Quebec (Historic area). Gros Morne National Park.

Canada and United States of America
Kluane National Park/Wrangell-St. Elias National Park and Preserve.

China
Mount Taishan. The Great Wall. Imperial Palace of the Ming and Qing Dynasties. Mogao Caves. Mausoleum of the First Qin Emperor. Peking Man site at Zhoukoudian.

Colombia
Port, fortresses and group of monuments, Cartagena.

*The Burgess Shale site, which was previously inscribed on the World Heritage List, is part of the Canadian Rocky Mountain Parks.

Costa Rica
Talamanca Range-La Amistad Reserves.

Côte d'Ivoire
Tai National Park. Comoé National Park.

Cuba
Old Havana and its fortifications.

Cyprus
Paphos. Painted churches in the Troodos region.

Democratic Yemen
Old walled city of Shibam.

Ecuador
Galapagos Islands. Quito (Old City). Sangay National Park.

Egypt
Memphis and its Necropolis: Pyramid fields from Giza to Dahshur. Ancient Thebes with its Necropolis. Nubian monuments from Abu Simbel to Philae. Islamic Cairo. Abu Mena.

Ethiopia
Simen National Park. Rock-hewn churches, Lalibela. Fasil Ghebbi, Gondar Region. Lower valley of the Awash. Tiya. Aksum. Lower valley of the Omo.

France
Mont-Saint-Michel and its Bay. Chartres Cathedral. Palace and Park of Versailles. Vézelay, Church and Hill. Decorated grottoes of the Vézère Valley. Palace and Park of Fontainebleau. Château and Estate of Chambord. Amiens Cathedral. Roman Theatre and Triumphal Arch, Orange. Roman and Romanesque monuments, Arles. Cistercian Abbey of Fontenay. Royal Saltworks of Arc-et-Senans. Place Stanislas, Place de la Carrière and Place d'Alliance, Nancy. Church of Saint-Savin sur Gartempe. Cape Girolatta, Cape Porto and Scandola Nature Reserve, Corsica. Pont du Gard (Roman aqueduct).

Germany (Federal Republic of)
Aachen Cathedral. Speyer Cathedral. Würzburg Residence with Court Gardens and Residence Square. Pilgrimage Church of Wies. Castles of Augustusburg and Falkenlust, Brühl. St. Mary's Cathedral and St. Michael's Church, Hildesheim. Monuments of Trier. Hanseatic city of Lübeck.

Ghana
Forts and castles, Volta, Greater Accra, Central and Western Regions. Ashante traditional buildings.

Greece
Temple of Apollo Epicurius at Bassae. Archaeological site of Delphi. Acropolis, Athens.

Guatemala
Tikal National Park. Antigua Guatemala. Archaeological Park and ruins of Quirigua.

Guinea and Côte d'Ivoire
Mount Nimba Strict Nature Reserve.

Haiti
National Historic Park—Citadel, Sans Souci, Ramiers.

Holy See
Vatican City.

Honduras
Maya site of Copan. Rio Platano Biosphere Reserve.

Hungary
Budapest, banks of the Danube with district of Buda Castle. Hollokö.

India
Ajanta Caves. Ellora Caves. Agra Fort. Taj Mahal. Sun Temple, Konarak. Group of monuments at Mahabalipuram. Kaziranga National Park. Manas Wildlife Sanctuary. Keoladeo National Park. Churches and convents of Goa. Khajuraho group of monuments. Group of monuments at Hampi. Fatehpur Sikri. Group of monuments at Pattadakal. Elephanta Caves. Brihadisvara Temple, Thanjavur. Sundarbans National Park.

Iraq
Hatra.

Islamic Republic of Iran
Tchogha Zanbil. Persepolis. Meidan Emam, Esfahan.

Italy
Rock drawings, Valcamonica. Historic centre of Rome. Church and Dominican Convent of Santa Maria delle Grazie with *The Last Supper* by Leonardo da Vinci. Historic centre of Florence. Venice and its lagoon. Piazza del Duomo, Pisa.

Jordan
Old city of Jerusalem and its walls. Petra. Quseir Amra.

Lebanon
Anjar. Baalbek. Byblos. Tyr.

Libyan Arab Jamahiriya
Archaeological site of Leptis Magna. Archaeological site of Sabratha. Archaeological site of Cyrene. Rock-art sites of Tadrart Acacus. Old town of Ghadamès.

Malawi
Lake Malawi National Park.

Malta
Hal Saflieni Hypogeum. City of Valetta. Ggantija Temples.

Mexico
Sian Ka'an. Pre-Hispanic city and National Park of Palenque. Historic centre of Mexico City and Xochimilco. Pre-Hispanic city of Teotihuacán. Historic centre of Oaxaca and archaeological site of Monte Alban. Historic centre of Puebla.

Morocco
Medina of Fez. Medina of Marrakesh. Ksar of Aït-Ben-Haddou.

Nepal
Sagarmatha National Park. Kathmandu Valley. Royal Chitwan National Park.

New Zealand
Westland and Mount Cook National Park. Fiordland National Park.

Norway
Urnes Stave Church. Bryggen. Roros. Rock drawings of Alta.

Oman
Bahla Fort.

Pakistan
Archaeological ruins at Moenjodaro. Taxila. Buddhist ruins of Takht-i-Bahi and neighbouring city remains at Sahr-i-Bahlol. Historical monuments of Thatta. Fort and Shalamar Gardens, Lahore.

Panama
Fortifications on the Caribbean side of Portobelo-San Lorenzo. Darien National Park.

Peru
City of Cuzco. Historic sanctuary of Machu Picchu. Archaeological site of Chavin. Huascaran National Park. Chan Chan archaeological zone. Manu National Park.

Poland
Historic centre of Cracow. Wieliczka Salt Mine. Auschwitz Concentration Camp. Bialowieza National Park. Historic centre of Warsaw.

Portugal
Central zone of the town of Angra do Heroísmo, Azores. Monastery of the Hieronymites and Tower of Belem, Lisbon. Monastery of Batalha. Convent of Christ, Tomar. Historic centre of Evora.

Senegal
Island of Gorée. Niokolo-Koba National Park. Djoudj National Bird Sanctuary.

Seychelles
Aldabra Atoll. Vallée de Mai Nature Reserve.

Spain
Mosque of Cordoba. Alhambra and Generalife, Granada. Burgos Cathedral. Monastery and site of the Escurial, Madrid. Parque Güell, Palacio Güell and Casa Mila, Barcelona. Altamira Cave. Old town of Segovia and its aqueduct. Churches of the Kingdom of the Asturias. Santiago de Compostela (Old town). Old town of Avila with its extra-muros churches. Mudejar architecture of Teruel. Historic city of Toledo. Garajonay National Park. Old town of Cáceres. Cathedral, Alcazar and Archivo de Indias, Seville.

Sri Lanka
Sacred city of Anuradhapura. Ancient city of Polonnaruwa. Ancient city of Sigiriya.

Switzerland
Convent of St. Gall. Benedictine Convent of St. John, Müstair. Old city of Berne.

Syrian Arab Republic
Ancient city of Damascus. Ancient city of Bosra. Site of Palmyra. Ancient city of Aleppo.

Tunisia
Medina of Tunis. Site of Carthage. Amphitheatre of El Djem. Ichkeul National Park. Punic town of Kerkuane and its Necropolis.

Turkey
Historic areas of Istanbul. Göreme National Park and rock sites of Cappadocia. Great Mosque and Hospital of Divrigi. Hattusha. Nemrut Dag.

United Kingdom
Giant's Causeway and causeway coast. Durham Castle and Cathedral. Ironbridge Gorge. Studley Royal Park including ruins of Fountains Abbey. Stonehenge, Avebury and associated sites. Castles and Town Walls of King Edward in Gwynedd. St. Kilda. Blenheim Palace. City of Bath. Hadrian's Wall. Palace of Westminster, Westminster Abbey and St. Margaret's Church.

United Republic of Tanzania
Ngorongoro Conservation Area. Ruins of Kilwa Kisiwani and ruins of Songo Mnara. Serengeti National Park. Selous Game Reserve. Kilimanjaro National Park.

United States of America
Mesa Verde. Yellowstone. Grand Canyon National Park. Everglades National Park. Independence Hall. Redwood National Park. Mammoth Cave National Park. Olympic National Park. Cahokia Mounds State Historic Site. Great Smoky Mountains National Park. La Fortaleza and San Juan Historic Site, Puerto Rico. Statue of Liberty. Yosemite National Park. Chaco Culture National Historical Park. Monticello and University of Virginia, Charlottesville. Hawaii Volcanoes National Park.

Yemen Arab Republic
Old city of Sana'a.

Yugoslavia
Old city of Dubrovnik. Stari Ras and Sopocani. Historical complex of Split with the Palace of Diocletian. Plitvice Lakes National Park. Ohrid Region and its Lake. Kotor and its Gulf. Durmitor National Park. Studenica Monastery. Skocjan Caves.

Zaire
Virunga National Park. Garamba National Park. Kahuzi-Biega National Park. Salonga National Park.

Zimbabwe
Mana Pools National Park, Sapi and Chewore Safari Areas. Great Zimbabwe National Monument. Khami Ruins National Monument.

States Parties to the World Heritage Convention

The following States, in addition to those mentioned in the List above, are also Parties to the Convention Concerning the Protection of the World Cultural and Natural Heritage: Afghanistan, Antigua and Barbuda, Burkina, Burundi, Cape Verde, the Central African Republic, Chile, the Congo, Denmark, the Dominican Republic, Finland, Gabon, the Gambia, Guyana, Jamaica, Lao People's Democratic Republic, Luxembourg, Madagascar, Maldives, Mali, Mauritania, Monaco, Mozambique, Nicaragua, Niger, Nigeria, Paraguay, the Philippines, Qatar, Saint Christopher and Nevis, Saudi Arabia, the Sudan, Sweden, Thailand, Uganda, Viet Nam and Zambia.

The emblem of the World Heritage Convention symbolizes the interdependence of cultural and natural properties: the central square is a form created by man and the circle represents nature, the two being intimately linked. The emblem is round like the world, but at the same time it is a symbol of protection

Back cover

Serengeti National Park and Ngorongoro Conservation Area (United Republic of Tanzania)

Serengeti National Park, 1.5 million hectares of savannah and open woodland, contains the world's largest herds of grazing animals. The migration of wildebeest, zebra and gazelle in May and June, when they move from the central plains to the water holes in the west of the Park, is a wildlife spectacle second to none. In some cases the caravans of animals, trailed by their predators, can extend over 10 km. The Park and the adjoining Ngorongoro Conservation Area form the biggest wildlife reserve on Earth. In the centre lies the grandiose Ngorongoro Crater, an extinct volcano 2,286 m above sea level at the rim, 15 to 20 km across and over 600 m deep. The region has been home to generations of Masai herders, whose cattle, sheep and goats share pasture and water holes with a rich variety of wildlife. Excavations in the Olduvai Gorge, to the west of the Ngorongoro Crater, led to the discovery of fossilized animal and human remains, in particular those of *Homo habilis*, which provide crucial evidence about man's evolutionary ancestry.

Chan Chan (Peru)

The spectacular ruins of this ancient capital of the Chimú kingdom testify to the grandeur of a vanished civilization. Around 1200 AD, the Chimú civilization succeeded the Mochica culture in the Moche valley, which was the centre of a vast empire stretching from the Gulf of Guayaquil in the north to Paramonga in the south. In this arid area a sophisticated irrigation system channelled river water along an 80-km-long canal, bringing a degree of fertility to Chan Chan which it is hard to imagine today. With an area of 20 km^2, Chan Chan was the largest city in pre-Columbian America. The central zone is divided into 9 great rectangular compounds whose straight parallel streets are enclosed by earth ramparts. Each of these compounds, which were doubtless inhabited by royal or aristocratic families, was filled with temples, houses, gardens and cemeteries grouped around squares. The adobe walls are often decorated with relief friezes depicting marine deities. The Chimú were skilled craftsmen who produced excellent work in wood, in textiles and in gold, silver and copper. Chan Chan is threatened by 2 major problems: looting, from which it has suffered for centuries, and natural erosion which is attacking the fragile adobe walls. Conservation work has been carried out on the frescoes and wall paintings and in 2 of the palaces. But the safeguard of the city will be a continuing task calling for systematic consolidation of the buildings. The archaeological zone of Chan Chan was inscribed on the List of World Heritage in Danger in 1986.

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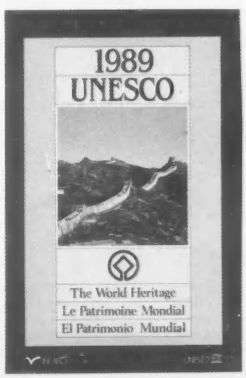

The Courier

A window open on the world

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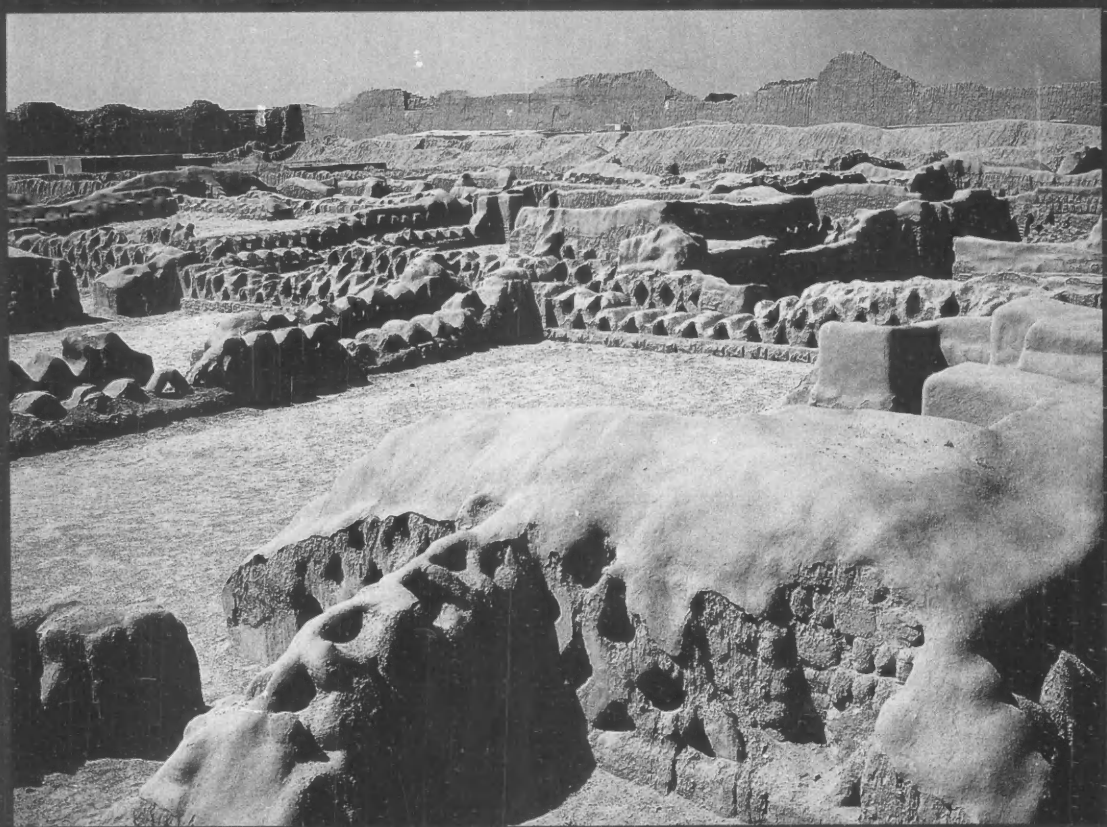
Photo Jacques Thomas © Explorer, Paris

The Ngorongoro Crater in the United Republic of Tanzania, above; below, the ruins of Chan Chan in Peru.

(See descriptions page 39.)



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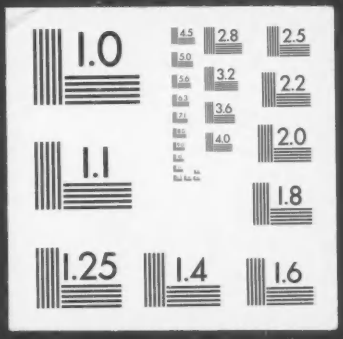
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